



mined proportion, had given rise to the brown or black matter with which they were in contact."<sup>1</sup> It should be borne in mind also, that clots of coagulated blood, smeared over with coffee-ground matter, are either passed from, or discovered in, the intestines. The black matter sometimes comes in form of figured stools composed entirely of it, and made into form and consistence merely by a small quantity of intestinal mucus; the whole mass being, as I have already had occasion to mention, except in colour, of the usual appearance of a child's alvine evacuation.<sup>2</sup> Nothing of the kind is found in the stomach, and as it is not likely that the effect noted could be produced by means of coffee-ground matter formed at a distance from the part where such compounds were found, or from which they had been discharged, we must view them as formed or covered with a matter effused by the intestines themselves. Nor must we forget that, if black vomit often precedes the ejection of black stools, the contrary is not unfrequently the case; the matter being evacuated from the bowels before it is ejected from the stomach, or indeed before it is *formed* in that organ, as proved by a comparison of substances voided both ways. All this proves, as Louis judiciously remarks, that the black matter does not come from one source only, but may come as well from the intestines as from the stomach. Moreover, the tar-like or coffee-ground matter has been found, after death, oozing from the vessels on the surface of the villous coat of the intestines and other abdominal organs; or it has been pressed out from congested portions of the intestinal membrane.<sup>3</sup> Again, when black matter is voided per anum, the patient stands a better chance of recovery than when it is discharged by the stomach; a result which would scarcely obtain were it formed in the latter organ. For, were this the real place of its origin, the indications of danger would be as great when the matter is voided from the bowels, as we know it to be when it is vomited; there being no reason why danger should be lessened by the mere fact of the matter passing into the intestines instead of being expelled by the mouth. In conclusion, it may be remarked that the appearance of black coffee-ground stools towards the fourth day cannot prove the gastric source of the effusion, as it is about this period that the hemorrhagic tendency is established; and lastly, that nothing can be made out of the absence of signs of intestinal inflammation or congestion, inasmuch as the effusion is the result of a passive or relaxed condition of the vessels, and, like black vomit, is perfectly compatible with a state of integrity of the mucous membrane.

<sup>1</sup> *Op. cit.* p. 112.<sup>2</sup> Dickson, *Am. Jour.* ii. p. 73.<sup>3</sup> Arnold (of Jamaica), p. 38.

Of the composition of the white and precursory vomit, we know, as yet, little. Though some was collected on several occasions last summer, the opportunity of having it chemically examined, did not present itself. As already stated, it was strongly acid; and everything leads to the opinion expressed by Dr. John Davy, who remarks that, "judging from analogy, it will be found to be serous, or to contain albumen;—the analogy, for instance, of the discharges in cholera, in diarrhœa, and dysentery, and, I may add, in catarrh; even in common catarrh, I have found the perfectly transparent fluid which drops from the nostril, possessed of the properties of very dilute serum, exhibiting, with test papers, an alkaline reaction, and affording, on being boiled, a minute quantity of coagulated albumen."<sup>1</sup>

The black vomit has been submitted to a microscopic examination by Dr. J. Davy,<sup>2</sup> Drs. Hayne<sup>3</sup> and Michel,<sup>4</sup> of Charleston, Dr. Riddell,<sup>5</sup> of New Orleans, Dr. Alonzo Clark,<sup>6</sup> of New York, Dr. Hassall,<sup>7</sup> of London, and, at my request, by Dr. Leidy, of this city, and the result of their experiments goes to prove beyond doubt the correctness of the views here contended for as to the nature of the fluid. Dr. Davy says that, "under the microscope, black vomit has appeared to be very heterogeneous, exhibiting small irregular plates, not unlike epithelium plates; numerous particles, not unlike blood-corpuscles, altered by the action of water; and some larger and grayish clustered particles." Dr. Hayne describes the fluid as containing blood-corpuscles in the greatest abundance, floating in a dark fluid. They were, however, considerably altered in form, being, as it were, considerably flattened and elongated. There were also epithelium scales. Dr. Michel, in his first publication on the subject, in 1849, states that he found it to consist of blood with vitiated corpuscles, and of epithelial scales, the whole floating in the serum. In his second essay, which appeared in May, 1853, the same intelligent and reliable writer says:—

"Had the smallest particle of this black liquid been conveyed to the stage of the microscope years ago, when the whole country disputed its character, speculating and theorizing ingeniously about it, it would have been found to be nothing more nor less than blood, mucus, and epithelia, disturbed by the action of some reagent, and in forms as tangible, if I may so speak, to the compressorium and other instruments in ordinary use, as these organic products are in any other condition. The coffee-ground sediment presented every resemblance to coagulated blood, appearing as so many-dense opaque masses, tinged darkly with hematine. Small portions, rendered less opaque by proper manipulations, were found to consist of shreds or beds of mucus, entangling numerous scales, granules, and some disks; and as they floated over the field of vision, the tenacity with which the flocculi of black vomit preserve their colour and form, seemed easily explained, the blood being so inclosed among

<sup>1</sup> Blair on Yellow Fever (Appendix), pp. 158, 159.

<sup>2</sup> Notes on Blair, p. 81.

<sup>4</sup> Charleston Journ. v. pp. 748, 749.

<sup>6</sup> New York Med. Times, ii. p. 230.

<sup>7</sup> Lond. Lancet, April, 1853, Am. ed. p. 325.

<sup>3</sup> Charleston Journ. viii. p. 345.

<sup>5</sup> N. O. Journ. ix. p. 420.

greatly of "soreness in stomach;" says "that she shall die to-night, as there is so much *vinegar* in her stomach;" spits a great deal; expectorated matter somewhat brownish in colour; is distressed at the sound of any one's coughing, saying that it makes her feel faint; asks to have her pulse counted, saying that she will not live long; tongue red.

8 P. M. Dr. J. M. Warren saw the patient at the Hospital, in consultation with Dr. Cabot; she was then affected with almost indescribable jactitation; a condition which might convey the idea of a person being between insanity and a state of intense fear; crying out frequently; constantly begging for help; frequently spitting out, with effort, tenacious saliva in small quantities, with an occasional spasmodic action of the diaphragm, causing a sound between a cough and hiccough, somewhat resembling the bark of a dog; in one of these efforts, she vomited about two ounces of a dark brown, grumous fluid.

9 P. M. Convulsive action increasing in severity and frequency; skin dry; tongue red; unable to number the pulse-beats. The patient was now etherized and half a drop of dilute hydrocyanic acid given to her; her pulse fell (when she was fully etherized) to 140, and became fuller.

11 P. M. The hydrocyanic acid was repeated; etherization continued.

12 (midnight). She was breathing quite freely and easily under the influence of the ether, constantly administered; pulse very slightly accelerated, and of sufficient strength. Etherization still maintained, having been nearly uninterrupted since 9 o'clock of the evening. The respiration, soon after midnight, became laboured and slightly stertorous; ether discontinued; in a few minutes, breathing natural. Shortly after this the pulse began to diminish gradually in frequency, until scarcely perceptible at the wrist; pulsations of temporal artery continuing distinctly; stimulants were given, and friction used for fifteen minutes, but unsuccessfully, death ensuing about ten minutes before 1 o'clock of the morning of the 22d.

22d. *Post-mortem Appearances.*—The examination was made ten hours after death.

*Brain.*—Rather livid in aspect; odour of ether strongly perceived from it; the entire gray portion very dark in colour; nothing else of note observed; the same dark hue in the gray substance of the medulla oblongata.

*Lungs and Heart.*—Perfectly healthy.

*Stomach.*—Contained about 3ij of a greenish-brown grumous fluid; otherwise healthy, but pale in colour.

*Œsophagus, liver, spleen, and kidneys,* healthy.

*Spinal cord,* so far as examined, healthy.

By a written statement from her father to Dr. Cabot, it appears that the sight or thought of water and fluids did not affect her except she attempted to drink, or when water was applied to her face; she could not bear the application of even a moistened cloth to her face; water applied to the *hands and feet* produced no disagreeable sensations or effects; a current of cool air, the transition from the warm air within the railway car to the external atmosphere, even the breath puffed upon her face ever so gently, caused her to start, shiver, and catch her breath. A veil over her face produced the same sort of sensation as water, &c., only less severe; obliged to have it removed; the smoke and steam of the railway engine also produced nearly similar effects. During her stay at home, after her first residence at the Hospital, although often restless, she is reported to have slept quietly much of the time, and this was true of the night previous to the access of the convulsive shuddering; her appetite was good, and her bowels were regular. During the day of her second coming to the Hospital, she was noticed to gape frequently; and with





Natural respiration: 74.72	Natural respiration: 67
Moderate fixed inspiration: 68.64	Moderate expiration: 76
Deep fixed inspiration: 57.47	Deep expiration: 84
Profound fixed inspiration: 48.48	Profound expiration: 96

Suspecting that the lung capacity, *i. e.* vital capacity, might regulate the amount of inspiratory fall, in individual cases, I selected two cases, one, whose normal pulse is subject to great diurnal changes, under the influence of functional or other causes, and another of a less excitable nature. Amidst the many variations of this first-named pulse, and in all its inspiratory and expiratory modifications, the vital capacity remained the same.

TABLE II.

*Observations on the Diurnal Changes of the Pulse of Case 3, Table I.*

No.	Time.	Condition seated.	Natural pulse.	Inspiratory pulse.	Fall of inspiratory pulse.	Expiratory pulse.	Rise of expiratory pulse.	Extreme of difference.
1	3½ P. M.	Digesting	108	59	49	120	12	61
2	2 A. M.	Mental labour	74	52	22	92	18	40
3	7½ A. M.	Fasting	68	51	17	85	17	34
4	9 A. M.	Digesting	79	56	23	96	17	40
5		Mental labour	63	52	11	88	25	36
6	4 P. M.	Digesting	76	52	24	92	26	40
7	1½ P. M.	Fasting	72	49	23	83	11	34
8	10½ A. M.	Digesting	64	52	12	92	28	40
9	10½ P. M.	Fasting	76	49	27	99	23	50
10	12 P. M.	"	65	44	21	88	23	44
11	12½ P. M.	"	76	49	27	91	15	42
12	1 A. M.	"	74	50	24	89	25	39
13	11 P. M.	Fasting after exercise	88	55	33	96	8	41
14	11½ P. M.	Fasting	80	52	28	96	16	44
15	3 P. M.	Digesting	83	56	27	104	21	48
16	11 P. M.	Fasting	74	48	26	92	18	44
17	11 A. M.	After exercise	82	52	30	96	14	44
18	2 P. M.	Fasting	70	46	24	90	20	44
19	3½ P. M.	Digesting	80	55	25	104	24	49
20	4 P. M.	"	84	55	29	96	12	41
21	7½ P. M.	"	81	52	29	97	16	45
22	3 A. M.	Mental labour	68	47	21	84	16	37
Average			76.59	51.5	25.09	89.54	18.40	42.59

Vital capacity 287 cubic inches.

Height 5 feet 11½ inches.

brown hue and granular hematine. In the second (F), we have the same materials, with the addition of some oil globules and a yeast fungus. Both specimens contained epithelia, but these are not represented, because, as Dr. Leidy remarks, they are a normal constituent of the gastric liquids.

From all that precedes, we cannot but perceive the impossibility of denying that the sedimentary portion of the black vomit is composed almost entirely of blood-corpuscles in various stages of degradation. These altered corpuscles have been found to constitute the main element in the composition of that substance by the writers mentioned, as well as by Dr. T. Hewson Bache, Dr. J. E. Rhoads, Dr. J. Darragh, Resident Physicians of the Pennsylvania Hospital, Dr. J. F. Green, of the city, and indeed by all who have submitted the fluid to a microscopic examination.

The next most prominent feature in the black vomit is, the presence of epithelial cells. These vary in respect to their abundance, size, and shape, and while stated by some to have presented themselves in all the specimens examined, they have, in some instances, been found wanting. Of the six specimens reported upon by Dr. Leidy, two were deficient in this particular. The size and shape of these cells, as observed by Dr. Riddell, have already been referred to. In the hands of Dr. Michel, the *scaly*, *columnar*, and *spheroidal*, have, at different times, been plainly made out with their nuclei and nucleoli, but in very different proportions—the scaly or lamellar cells being always most numerous.

“Many of these latter,” Dr. Michel states, “are seen as perfect in shape as when artificially removed from the mucous surfaces of the throat, gullet, or mouth, and frequently united by an adhesive intercellular matter in the order of the hexagons of a tessellated pavement, some presenting at their centres accurately defined nuclei, which the addition of a little diluted acetic acid rendered even more apparent. These are evidently shed from the mucous lining of the œsophagus, pharynx; back part of the fauces, and mouth during the act of vomiting.” “But if carefully examined, there is no sample which will not disclose the presence of the columnar epithelium of the gastric membrane.”

These varieties of cells are represented in Plate I. Figs. 7 and 8, which I borrow, with permission, from Dr. M.'s essay.

The existence of these cells in the black vomit cannot be matter of astonishment, inasmuch as every physiologist knows that the fate of the epithelium is very different from that of other parts; for while the old elements in other cases are reconveyed into the blood, those of the epithelium are shed on the free surface of the mucous membrane, and thus become at once eliminated from the system. Hence, they are detached and more easily shed, doubtless, in the disease in question in consequence of the morbid state of the stomach, and its abrasion from the acidity of the black vomit, during the act of vomiting. Dr. Riddell remarks, that upon the inner coat of pieces of stomach, which, before the death of their owners, had cast off black vomit, he found myriads of these cells developed, and traversed by most delicate capillary bloodvessels, which, by a little aid of the imagination, appeared to be newly formed.” If

last trouble, as he calls his retention. He says that, two years ago, he suffered from a very severe attack of what I suppose to have been some form of orchitis, but he says it did not suppurate, though it was enormously swollen and exquisitely painful. It yielded slowly to antiphlogistic treatment, but has remained slightly enlarged ever since, and now seems a little indurated.

At this period, I discontinued my visits, and left him in the care of his family physician, whose near residence enabled him to visit him frequently, while the distance of my residence, and numerous duties, made it impossible for me to watch the case from day to day.

30th. I have been sent for to visit the patient under a new set of symptoms. He draws off his water with the catheter once or twice a day, and passes some, naturally, in the mean time; but the tone of the bladder has, probably, been weakened by the enormous distension to which it was subjected previous to the operation; so that it does not appear to contract sufficiently to entirely empty itself. However, he does not appear to suffer much inconvenience from his urinary difficulties, but the orchitis has turned out more gravely than we anticipated. There has been extensive suppuration within the tunica vaginalis, and pus is now discharging through an opening in the scrotum; and, in addition to this, there has been extensive angiioleucitis extending from the scrotum down the course of the great lymphatics of the thigh, and three large deposits of pus, between the groin and knee are ready for the bistoury. He has a most distressing cough, with hectic and night-sweats, and we fear the deposition of pus in the lungs, and, possibly, other internal organs. The wound made by the trocar is also discharging pure pus, but no urine; and the region of the pubis is considerably swollen, and somewhat boggy. I passed a probe through the passage made by the trocar, till it came in contact with the cellular tissue underlaying the symphysis, but it would not enter the bladder; nor did its introduction cause much pain.

The abscesses on the inner side of the thigh were evacuated by the bistoury and a yeast poultice applied to the pubis, and the patient put on a liberal allowance of wine, with four grains of the sulphate of quinia, and eight of Dover's powder every six hours, with egg-toddy and beef-tea *ad libitum*.

August 8. Abscesses on the thigh exhausted and nearly healed; scrotum has ceased to discharge; the cough still very troublesome, and this morning he coughed and spat up about half a pint of pus and blood. In doing this, he came near strangling from the suddenness and copiousness of the discharge. He is still coughing up pus, mixed with blood, some eight hours after the first gush in the morning; and the sputa are mixed with what seems to be shreds of decayed cellular membrane (it proved to be such under the microscope), and I inferred that there had been a deposition of pus in the lungs, which had produced its characteristic abscess, the sudden bursting of which came so near proving fatal. The puncture in the pubis has assumed a more healthy appearance, and, though still discharging, gives little inconvenience. In the absence of Dr. PORINO, I ordered the wine to be continued, with the substitution of bark for the quinia (the Dover's powder had been discontinued for some time), and roast beef instead of the beef-tea, with a half pint of egg-toddy, containing a large tablespoonful of brandy as a dessert.

September 6. Visited the patient to-day for the first time since the 8th of last month. Found him a good deal emaciated, and quite weak, but able to rise from his sofa and assist himself to a chair; appetite not so good as at my last visit; cough nearly gone, and very little expectoration. The sores have all ceased to discharge, except the puncture at the symphysis, which, though nearly closed, seems to remain open more from the general depreciation of

this be so—if, as Dr. Riddell states, epithelial cells are abnormally developed in the yellow fever; if they become filled with blood, the latter pushing forward into them, as in embryonic development, forming capillaries—and, if in consequence of their extreme tenuity and want of strength, they rupture—thereby giving passage to their contents into the cavity of the stomach; and if “this great development of delicate cells upon the mucous coat of the stomach” turns out to be “a most important link in the chain of causation, which ends in black vomit,” we shall have been furnished with facts or suggestions not before mentioned, and for which that able experimenter should be duly credited.

The black liquid matter formed in the upper part of the intestinal canal, as well as the coffee-ground fluid discovered in other portions of the latter, have much the same appearance under the microscope as that which proceeds from the stomach. Somewhat different is the result obtained in the examination of the dark or black pasty and tar-like matter discharged from the bowels, and found, and doubtless formed, in the lower portion of the canal. Of this, the microscopic character bears but a slight resemblance to that of the gastric effusion. It is found to consist of a muco-granular substance, containing a multiplicity of lacerated cells, but no blood-corpuscles. Dr. Michel states, that the dark-bluish mucous colour of this substance is hardly obscured by any hematine. True, however, as this may be, we can find no reason to doubt the identity or close connection of this fluid with the true black vomit, or to withhold our belief from the fact that the difference arises from the circumstance that, in cases in which the matter ejected per anum assumes the appearance in question, the blood has undergone a kind of digestion in its passage through the intestines.<sup>1</sup> (See Plate I. Fig. 9.)

Dr. Samuel Jackson, in his account of the epidemic of yellow fever which prevailed in this city in 1820, remarks that Dr. Rhees, the resident physician at the City or Fever Hospital, in some experiments he instituted on the black vomit with a solar microscope, found innumerable quantities of animalculæ to exist in it. A single drop contained many thousands, being apparently a congeries of them. The black mucus of the intestines exhibited the same phenomenon. When the matter fresh thrown from the stomach was examined, the animalculæ were alive, and in constant motion; but if taken from the dead subject, or inspected after standing some time, they were always dead and quiescent.<sup>2</sup>

Others have made analogous statements, and very recently Dr. Manley, in a short communication to the *London Lancet*, remarks, that his attention was first called to the subject by a paragraph in *Wood's Practice*; and that, during the prevalence of the yellow fever in Pernambuco, in 1852, he verified the fact in several instances—the animalculæ being acari (species unknown).<sup>3</sup>

<sup>1</sup> Michel, *loc. cit.* p. 338.

<sup>2</sup> An account of the Yellow or Malignant Fever as it occurred in the City of Philadelphia in 1820, p. 81. *Ib.* in *Philad. Journ. of Med. and Physical Sciences*, ii. p. 23.

<sup>3</sup> *London Lancet*, Am. ed. Feb. 1853, p. 192.

to learn from a competent observer the actual condition of the various institutions which, in that wide and populous region, are specially devoted to the treatment of the various forms of mental disease.

T. S. K.

ART. XXIV.—*Dental Chemistry and Metallurgy: Chemistry and Metallurgy, as applied to the Study and Practice of Dental Surgery.* By A. SNOWDEN PIGGOT, M.D. Philadelphia: Lindsay & Blakiston, 1854. Pp. 516.

THIS new work is designed to fill a vacancy in the dental library, and meet a pressing want of the profession. Its author gives ample proof of the sufficiency of his resources, and exhibits great skill in their employment for the special use intended. For practical purposes, it has the character of a manual and operative directory; and for instruction in the scientific relations of his theme, it could scarcely be more judiciously and profitably executed. It is neither incumbered nor deficient in chemical science. It at once guides the operative dentist in the details of his every-day work, and teaches the student the principles directly involved in the philosophy of his profession. The liberal learning and the practical art of dentistry are alike provided for, with a perspicuity, compass, and exactitude that are worthy of high commendation. In the first book, "The Ultimate Chemical Elements of the Human Body" are well presented for the general purposes of the work. In the second, we have "The Chemistry of Digestion." These departments, which occupy one hundred and fifty pages of the treatise, are clearly necessary to the dentist who would understand the functional agencies which affect the organs whose diseases he must understand and treat. The general principles of organic chemistry must necessarily form the basis of a successful investigation of any of its specialties, and it is quite impossible to understand the fluids of the mouth, and the processes which take place in it, without some knowledge of those ulterior stages of digestion with which its functions are directly connected. These introductory divisions of the work are, therefore, of primary importance in the discussion of the subjects which are the specific aim of the work. The third book is occupied with "The Chemistry of the Mouth"—the teeth, saliva, the morbid changes of saliva, in all their forms; mucous and salivary calculi. The fourth book is upon "The Chemistry and Metallurgy of the Metals and Earths used by the Dentist;" the first chapter—on the different methods of applying heat, furnaces, and auxiliary apparatus—illustrated by a large number of well-executed engravings. The remaining ten chapters are upon as many metals, their alloys, compounds, and behaviour in the processes to which they must be subjected.

The chapters on gold and silver, and especially the tables of the coinage of different nations and dates, showing their weight, fineness, and value, are of great importance every way, but particularly in enabling the mechanical dentist to avoid those crystalline, unmalleable alloys that prove so troublesome in practice, as well as ascertain the exact composition of the plate, are matters of very great moment. To all this are added seven or eight chapters on the materials used in making incorruptible teeth, the colouring matters, and the preparation of the materials.

The work, it will be seen by this brief synopsis, is a full one, well and methodically arranged. It appears to us to be as well treated as it is planned, and we are satisfied it will contribute handsomely to that commendable effort which the profession is now making to liberalize and elevate its study and practice.

The publishers have got out the book in their best style.

E. T.

Nothing of the kind, however, has been found in the experiments of Dr. Clark, Dr. Leidy, and Dr. Hassall. Dr. Michel, in a short essay on the black vomit, published in the fifth volume of the *Charleston Medical Journal*, stated that the fluid never presented infusoria when fresh, but that these were developed whenever small quantities were allowed to remain in the room. (p. 748.) Subsequent examinations, however, made on a larger scale, have not confirmed this statement; for Dr. M. now informs us that, in recent samples of the ejecta, he never detected spontaneous evolutions of the kind.

"On this subject," he says, "I have experimented with care; and if by *animalculæ* we are to understand the initiatory forms of *animal* cell life, as they are recognized in the familiar varieties of Polygastrica and Rotifera, I say, without hesitancy, that such were never to be seen, either in fresh or putrescent specimens of the vomit. Dr. Rhees's experiments were made with the solar microscope, an instrument certainly not adapted for such investigations as these." "If infusoria were present, we could hardly fail to encounter them, for whoever has watched the development of the simple monad, is aware that they are propagated with such magical rapidity, that when one is discovered, countless numbers are soon found to follow in its suite."

In the experiments of Dr. Riddell, minute filiform algæ were uniformly present, varying from .00001 to .00003 in thickness. Several jointed forms of moving algæ were equally constant, though mostly very small. Vital organizations still more minute, were constantly met with. In one sample of black vomit, an unusually trifling form of that rather rare parasitic organism, the Sarcina, was observed. The cells or segments in that sample were arranged mostly in squares, and each separate segment, having an oval form, measured near .00003. p. 421. Other investigators have found nothing of the kind. Nor is this to be wondered at; for, as has been remarked by both Dr. Hassall and Dr. Michel, the black vomit, from its intense acidity, is not favourable to the development of algæ, which are not likely ever to be present, except as the result of decomposition. From the same cause—the acidity of the fluid—and from the circumstance of the latter being an organic product, we must be better prepared to find it containing fungi of various kinds. Hence, these products—especially the *Torula*—have often been described as present. A small variety of the concentrated form of them was discovered, with one or two exceptions, in every sample examined by Dr. Riddell. They were generally very abundant. The individual buds were oval, averaging .00018 in length by .00012 inch in breadth. In Plate II. Figs. 11, 13, 14, 15, will be found figures of the algæ and fungi observed and described by Dr. Riddell. The examinations of the putrescent fluid afforded Dr. Michel an opportunity of witnessing the development and mode of growth of a fungus Protophyte very much resembling the *Torula cerevisii*, if it be not identical; the only difference being the constant absence of nuclear cells at all periods of its development and growth. Dr. Hassall detected: 1. Ramose branches of the sporules of a fungus; 2. Large circular sporules, usually single, but sometimes ranged in rows, and giving origin to slender threads or

plaint the patient happened to be on his admission. There is no reason to suppose that its influence is greater at one stage than at another. It should be stated, however, that an aperient was prescribed when it was required, and sometimes an anodyne at night, when the sufferings were so great as to prevent sleep.

It is not easy to determine the mode of action of the salt in this affection. The theory that it removes from the system a supposed redundancy of the lithates and lithic acid can hardly be sustained. Not only was there no marked acidity of the urine in several of the patients, but in two of them it was strongly alkaline, and in one loaded with phosphates. Even during the continuance of the nitrate, the urine regained its property of slightly reddening litmus-paper. Nor was there any sustained sensible action either on the bowels, skin, or kidneys. Purging never once occurred. In a few cases, the perspiration was occasionally increased, but by no means continuously; and, bearing in mind the tendency to copious sweating in rheumatism, it might be questioned whether the salt does not exert an influence in moderating, rather than augmenting, the cutaneous discharges. The urinary secretion was increased more frequently, and rather more permanently, but the diuresis was never very remarkable. Whether the salt possesses any action on the fibrin of the blood, these observations do not enable me to determine, but the symptoms and aspect of some of the patients scarcely warranted the idea that there was an excess of that ingredient in the circulating mass.

"The dose of the nitrate never exceeded half an ounce, and it was sometimes limited to three drachms daily; it was dissolved in a pint of water, the patient being directed to take the whole in twenty-four hours. This is a much smaller quantity of the salt than it has been recommended to employ for the cure of rheumatism; but there is a manifest advantage in prescribing it in as small a dose as will answer the purpose, for there will be less danger of its producing gastric or renal irritation; and, when two or three ounces are given daily, a large quantity of fluid is required for the necessary dilution, and this circumstance alone would render the remedy too disgusting to admit of its general adoption. No injurious consequences arose in any instance from the exhibition of the medicine, nor was there any complaint made by the patients of the disagreeableness of the remedy, or of any inconvenience arising from its use. There may be an apparent exception to this fact in the patient W—, who complained of dysuria when undergoing treatment with the nitrate. But, as this symptom continued although the medicine was withdrawn, and subsided after it had been again prescribed, it is hardly probable that the irritation had been occasioned by it in the first instance."

18. *Cerebral Complications in Acute Articular Rheumatism.* By VIOLA.—These important complications have been hitherto mostly overlooked in pathological treatises. They are not, however, extremely rare, for, in three months, M. Vigla has met with five cases, two of which recovered, and three proved fatal. Out of sixty-five cases, this complication was observed in the proportion of one in thirteen. The cerebral affection is perhaps the most important and dangerous complication in rheumatic fever. It varies, however, in character and intensity in different cases. The different kinds have been classified as follows by M. Vigla:—

1. Simple delirium, similar to the sympathetic or nervous delirium which occurs in many acute febrile diseases, whether of idiopathic or traumatic origin; in short, *rheumatism complicated with delirium*.
2. Delirium, accompanied by most of the symptoms, and probably also the lesions of meningitis, or the *rheumatic meningitis* of authors.
3. Sudden and unexpected ataxic condition, quickly succeeded by fatal collapse or coma, the *rheumatic apoplexy* of Stoll and some other authors.—*Archives Gén. de Méd.*

19. *Cases Illustrative of the Effects and Manner of Action of Particular Remedies in Diabetes.*—Dr. W. R. BASHAM has published (*Lancet*, Nos. for Jan. 21 and 23, 1854) five cases of diabetes, to illustrate the effects of some remedies recently



filaments; 3. Branched and moniliform threads of a fungus usually occurring in bunches; 4. Many compound cells, having the appearance of sporangia. (See Plate II. Fig. 16.) Dr. Clark, on the other hand, found in one of the specimens he examined, a vegetable growth in linear or rather stint joints (Plate II. Fig. 10), the sections commonly separated, but often united as by a hinge. It was in great abundance, but disappeared entirely after the lapse of three weeks. The same was found by Dr. Riddell (Fig. 12).

It thus appears that different fungi are evolved under particular circumstances, for each of the investigators referred to has seen different growths; while in many instances they fail entirely to be observed. From this we conclude that, when these bodies are found, they are accidental, and may not improbably be referred to particular substances administered as food or medicine, and that consequently, contrary to the opinion of Dr. Hasall, they have no relation to the cause of the vomiting.

But be this as it may, the inquirer who bears in mind what has been said respecting the microscopical characters of the true black vomit, backed by all the corroborative facts and circumstances before adduced; and who, at the same time, takes into consideration the close analogy existing between the fluid ejected from the stomach and other parts, and that artificially made by the means mentioned—a representation of which, as given by Dr. Michel, will be found in Plate II. Fig. 17—will, unless labouring under the incubus of some preconceived and favourite theory, feel little disposition to deny or doubt the sanguineous nature of the substance in question. It is altered blood mixed with inspissated viscid mucus and other gastro-intestinal secretions; themselves modified by a larger or smaller portion of hydrochloric acid.

The next question which presents itself is, how and where does the blood thus effused undergo those changes which impart to it the characteristics of the black vomit?

It has been supposed that the blood thus discharged in the cavity of the stomach has coagulated there, or on the surface over which it was effused, "and, having been detached and triturated by the violent and frequent contractions of that organ in the efforts to vomit, has had its appearance as a coagulum of blood altered, and its colour darkened by the gastric juice, or by some chemical decomposition, either spontaneous or produced by the action of the air, or other matters contained in the stomach."<sup>1</sup> Others have attributed the effect to the blood's being brought under the digestive power of the stomach.<sup>2</sup> That this opinion receives support from the facts mentioned of blood ejected from the stomach assuming subsequently the character of black vomit, and of coagula being found in that cavity presenting only exteriorly these characters, may perhaps be true. But it is opposed by facts and circumstances entitled to consideration. The stomach, at the period when black

<sup>1</sup> Bancroft on Yellow Fever, p. 28.

<sup>2</sup> Audouard, *Recueil*, Introd. p. 1; Rochoux, *op. cit.* p. 533.

lect having ever had an illness. It was scarcely to be wondered at that their common experience half inclined them to think that their constitution was the natural and patriarchal one.

Our hospital patient seems to have been of the same opinion with these elderly agriculturists. Like them, he has had some experience of life, being now seventy-four. Like them, too, he has enjoyed singularly good health, being a surprisingly fresh-looking man for his years, notwithstanding that he had passed through severe trials in early life. As a soldier in India, he sustained, when very young, a spear wound of the leg, where he has had, almost ever since, a small open ulcer, which he ascribes to the spear having been poisoned. In the Spanish war he was wounded at the battle of Barossa, in 1811. There are now evident marks of the bullet having passed through him from the left groin, piercing the blade of the *os ilium* in its course. For two years he lay in hospital; and recovering with a shortened limb and stiff joint, he was invalided on a pension of one and sixpence halfpenny, as a wounded sergeant and soldier of twenty-one years' service. This he has now enjoyed for forty-one years. Nor has his wound much incapacitated him; because, for many years, and down to his present illness, he had actually worked as a railway labourer. During this long period, he lived on his pension and wages in great comfort and sound health, until, on lately leaving off work, he became liable to constipation. At first, his bowels were moved every other day in general, and afterwards seldom oftener than once a week, unless he took physic, which he did seldom. At last, the action of the bowels seemed to cease altogether, and he went for four weeks without any evacuation, even though he made occasional trial of a laxative. At the end of the fourth week, a strong dose brought away a great accumulation. After that he had no further evacuation, and it is now three weeks ago. He had again made a few gentle attempts to assist nature; but he did not much insist upon this, because his lodging-house had no convenience, as he said, for a man under physic. During the entire period of seven weeks, he assures us he had no pain or other suffering whatever. But at last his belly got very large, so that his trousers would not button over it; and on this account he applied here for relief, and not for any actual illness.

On admission, he had no appearance of any suffering. He seemed a fresh, vigorous, active, cheerful man. He took his food tolerably well; the pulse was natural; and the tongue was only a little furred. "The abdomen," to quote the hospital journal, "is much distended, especially in the iliac regions, where there are two large prominent swellings projecting laterally, so that the crest of the ilium on each side is quite sunk, the tumours projecting much beyond the bones. There are different irregular swellings at different parts of the abdomen, especially in the track of the colon. Over some of these points percussion is quite dull; over others it is tympanitic. The circumference of the abdomen, where largest, is  $39\frac{1}{2}$  inches."

As it was judged unsafe to give him active purgatives by the mouth at once, in case of the great gut being firmly obstructed with hardened feces, a turpentine injection was properly administered by the clinical clerk in charge of him. The result was "a prodigious discharge of fecal matter of all degrees of consistence," much of it composed of very hard scybala. A dose of jalap and calomel given immediately after this forerunner, brought away also a great mass of feculent matter. Next day, being quite well, but with the abdomen as large as ever, another similar dose occasioned only an ordinary discharge. On the third day, the swelling being equally great, though now quite uniform, and everywhere clear on percussion, I gave him what has always appeared to me the most effectual of all safe energetic purgatives in cases of simple fecal accumulation—two drachms of oil of turpentine with six drachms of castor-oil, in the form of emulsion. But he had only two scanty loose discharges, and the belly continued in the same state, presenting especially the singular enlargement and overlapping of the iliac regions.

It was now apparent that, owing to long-continuous distension of the bowels with feces and gases, their muscular coat had lost its tone, in some regions at least, and especially in the cæcum and descending colon. It was then pro-

vomit is ejected, is not usually in a condition to carry on the digestive process; while in hematemesis, where the organ is comparatively healthy, or at least has not undergone changes calculated greatly to impair its digestive functions, the blood, though dark in colour, rarely assumes the coffee-ground appearance, and other characteristics of true black vomit. Furthermore, in yellow fever, the matter seldom remains long enough in the stomach or bowels, or on the surface of the membranes, from the capillaries of which it is effused to be changed by the digestive process, supposing this to be less impaired than we know it to be, and to undergo much of the trituration referred to by Dr. Bancroft. We can sometimes, as Dr. Evans remarks, distinguish this organ becoming more and more distended under our fingers as the matter accumulates, which it does in about ten minutes, and sometimes in a shorter period; and when filled the vomiting is renewed.<sup>1</sup> In addition to this, it may be urged that the matter of the black vomit oozes, at times, from surfaces where it can have undergone, or can undergo, no digestive influence, or no trituration; and has, as stated above, been detected in the engorged capillaries of the stomach and intestines, where of course it could, by no possible means, have been formed by the process contended for.

More natural is it to conclude, with many modern writers,<sup>2</sup> that the blood acquires generally, if not always, in the stomach and intestines—or in whichever part the phenomenon is observed—its peculiar and characteristic features; and that, when it does so, the effect, as may be inferred from the almost universally acid nature of the vomit, and the well-ascertained conversion of blood into a substance perfectly identical with that fluid by the addition of the acids, is doubtless due to its meeting there with a large portion of free hydrochloric acid, the morbid product of the disease.

Dr. Carswell claims the credit of being the first to suggest or prove the correctness of this opinion.

“The fact of the black discoloration of the blood effused into the cavity of the stomach and intestines being produced by the chemical action of an acid fluid or gas contained in those situations, does not appear to us to have been ever suspected till after the result of our experiments on this subject were made known.” “The matter of black vomit and dejections was *believed* to be *altered* in the stomach and intestines; but whether by a chemical or vital agent was quite undetermined.”<sup>3</sup>

In relation to this matter, it may once more be remarked that Dr. Cathrall, more than half a century ago, was fully aware that, by the action of an acid, blood was changed in its characters, and converted into a substance resem-

<sup>1</sup> A Clinical Treatise, &c. p. 249.

<sup>2</sup> Nott, p. 281; Am. Journ. ix.; Blair, p. 81; Wood, i. p. 301; Lyon, *loc. cit.*; Riddell, *loc. cit.*; Hunt, quoted by Dr. Riddell; Stevens, 288, 330; Michel, *op. cit.* 343, 344; Carswell, Cyclop. iii. p. 102; Pym, *op. cit.* 222; Harrison, N. O. Journ. ii. p. 147.

<sup>3</sup> Cyclop. iii. p. 102.

Distance between nipples,  $3\frac{1}{2}$  inches.

Distance between wound and middle line of the body,  $1\frac{1}{2}$  inch.

From left nipple to wound,  $1\frac{1}{2}$  inch.

On Friday, I again examined the child. I found it restless and uncomfortable. Skin hot and dry; pulse about 120 in the minute. Heart's sounds normal in character, somewhat muffled, and the apex could nowhere be felt punctuate. Præcordial dulness considerably increased in the upward and transverse direction. Abdomen was much distended and tympanitic. Respirations were very rapid, but nothing abnormal could be detected in the lungs or pleura by percussion or auscultation. An accurate examination was rendered very difficult, from the restlessness and crying of the child, and the excessive filthiness of the mother. Perfect rest was enjoined, and, as the bowels had not been moved, a second dose of castor oil was ordered to be given. Next day (Saturday), in consequence of indisposition, I was unable to visit the child, but sent Mr. John Brown, who was at that time acting as dresser in the clinical-surgical wards, to see the case for me.

Mr. Brown found the child worse than on the previous day. The bowels had been moved freely by the castor oil. Skin still hot and dry; respirations quick, laboured, entirely thoracic; pulse quick and feeble, but regular. Præcordial dulness extended vertically, commencing higher than normal; great distension of abdomen; eyeballs turned up. The treatment consisted of the administration of small doses of a mixture of equal parts of hydr. c. creta and Dover's powder. A teaspoonful of wine to be given occasionally.

On Sunday (September 12), I visited the child. I found the cardiac dulness evidently increased; it was difficult to hear the heart's sounds, from the extreme rapidity of its action. Respirations rapid and very feeble; child evidently sinking. An additional allowance of wine was ordered. The child died in the course of the day.

I went the next day, with instruments in my pocket, to endeavour to procure an examination of the body; this was obstinately refused by the parents.

An interesting question at once presents itself: What organ did this needle penetrate.

Professors Syme and Goodsir, to whom I related the case, were both of opinion that the needle must have entered the pericardium or the heart. I think it probable that the needle impinged upon the right ventricle. I may mention, that I passed a needle upwards and inwards, in the direction already indicated, into the chest of a fetus of the seventh month. I found the left ventricle slightly wounded, and the needle had gone through the middle of the right ventricle.

The freedom of acupuncture wounds from dangerous effects, is due, most probably, to the tenuity, sharpness, and polish of the instrument with which they are inflicted. The introduction of the needle is attended with no disturbance to the neighbouring textures, and no access of air can take place. In this respect, they resemble the subcutaneous wounds made by the tenotomy knife.

In the present case, I believe that, if the needle had been extracted immediately after the receipt of the injury, the child, in all probability, would have recovered. I think, in the present case, that there was no pleurisy; if it existed, it must have been very limited, or we should have had some evidence of it. The same may be said with reference to the existence of pneumonia. I think, however, that it is not improbable that the lung was wounded.

That pericarditis was present is pretty evident, if we take into consideration the increased area of præcordial dulness, the fact of the apex not beating distinctly at any point, and the indistinct muffled character of the sound of the heart when the effusion was at its greatest. I shall not proceed to inquire what would be the effect of the motions of the heart on a needle fixed in the parietes of the chest. Supposing the pericardium to have been the site of the injury or puncture, it is not improbable that inflammation of the muscular substance of the heart may have been set up along with the pericarditis.—*Monthly Journ. Med. Sci.* Oct. 1853.

bling in every particular the genuine black vomit. Before him, Portal, in speaking of the appearance of blood effused into the cavity of the stomach, remarked that doubtless it there "assumes a dark colour; because, not being then in contact with oxygen gas, it becomes carbonized by combining with the carbonic acid which exists in the stomach and intestines."<sup>1</sup>

Dr. Samuel Brown, of Boston, in his account of the epidemic which prevailed in that city in 1799, in speaking of the septic acid, which, according to Dr. S. L. Mitchell's theory, constitutes the cause of the disease, and is formed in the *prima viæ*, as well as derived from external sources of organic decomposition, says: "The coffee-coloured matter, commonly called black vomit, ejected in what are called bilious remitting fevers, seems to owe its colour to a mixture of this *acid*, as appears from its stimulant nature noticed by dissectors, with a quantity of bile and *blood*, which is poured out of such vessels as have their coats destroyed by this poison."<sup>2</sup> Dr. Lyons, as already stated, published in 1828 the opinion, based on experiment, that black vomit was blood changed from its normal state by the action of muriatic or gastric acid; and Pym, whose volume on the Bulam fever appeared in 1814, states positively that black vomit is blood modified by an acid. The account of Dr. Carswell's experiments appeared in 1830.

The propriety of this view of the mode of formation of the black vomit is farther illustrated by phenomena observed in other diseases, in not a few of which the changes in the blood, which approximate it in a greater or less degree to the fluid in question, are evidently due to the action of the acid secretions with which it comes in contact, or is mixed. The dark colour of the blood in hematemesis, which at times contrasts so strikingly with the florid blood of hemoptisis, has usually been ascribed to the circumstance that while the latter is of arterial origin, the former proceeds from the venous capillaries. With much show of reason it has been suggested that the difference depends on the circumstance of the admixture of the blood on the one hand, with oxygen in the lungs; on the other, with the hydrochloric acid of the gastric secretions. The probability of the fluid and gaseous contents of the alimentary canal acting on the blood after it is poured out, and depriving it of its bright colour, was strongly insisted upon by Portal (see the celebrated work just quoted), who disbelieved, as Areteus had done long before him, the venous origin of hematemesis; an opinion in which that very distinguished writer has been followed by several pathologists, and among these by our countrymen Drs. Condie, Nott, and Michel. If the comparatively small proportion of the acid existing in that disease can darken the blood to the extent often noticed, we can readily conceive how a much larger portion of it, acting on blood already impure, can impart to it the characters of black vomit.

<sup>1</sup> Cours d'Anatomie Médicale, v. p. 188; *Ib.* Obs. sur la Nature et le Traitement du Mélena—Mém. sur plusieurs Maladies, ii. p. 209.

<sup>2</sup> A Treatise on the Nature, Origin, and Progress of the Yel. Fev. &c. p. 46, 1800.

the os uteri is undilated or undilatable, the child being still alive, it ought not to be administered. If, in such a case, it induces powerful tonic contraction of the uterus, it destroys the child. We cannot control or confine its action, and, therefore, it is totally unsuitable to cases in which we only want a limited effect. Again, if exhaustion is an element in the case, it is wholly inapplicable, as we ought not to adopt any means which tend further to depress the vital powers. The powerful and sanitary influence of galvanism was most decidedly obtained in the preceding case" (referring to a case to which these remarks were appended), "and the great advantage of this agent is, that its effects may be carried to any degree, from first only exciting the uterus so to contract that its diameters are lessened, and that its tissue comes to be applied to the body of the child. These, however, may be at pleasure increased, so as to accomplish the expulsion of the child and placenta. The gradual changes produced upon the uterine tissue were admirably seen in the foregoing case, and also its great power developed by its continued application—to arrest the discharge, expel the child and the placenta, and leave the organ safe from the occurrence of post-partum flooding."—*Extracted from a case detailed in the proceedings of the local branch of the Provincial Medical and Surgical Association, 1847.*

In the above-named case, I used the poles externally, and have before this, and ever since, adopted this mode of application.

59. *Source of Hemorrhage in partial separation of the Placenta.*—Dr. MACKENZIE, in a paper read before the Medical Society of London, Dec. 17, 1853, pointed out that three different opinions prevailed at the present day respecting the anatomical source of hemorrhage in cases of partial separation of the placenta; the first affirming that it was principally or wholly uterine; the second, that it was principally or wholly placental; the third, that it was both uterine and placental. He further directed attention to the fact, that puerperal uterine hemorrhage, whether occurring in connection with partial or entire separation of the placenta, was generally considered to be principally venous, and he quoted passages from the writings of Drs. Simpson, Radford, Murphy, and Lee, in support of this statement. On reflecting upon these circumstances, he was led to believe that some light might be thrown upon the question by ascertaining experimentally the source of hemorrhage in an animal whose placenta, like that of the human female, was both decidual and foetal. A pregnant bitch was accordingly obtained, which had nearly completed the full period of gestation; the uterus was opened, several placenta were detached, and the following observations made: 1. On separating each placenta, it was found that blood flowed freely and continuously from the denuded uterine surface, increasing with the detachment, while none escaped from the detached portion of the placenta. 2. That the blood which escaped from the uterus was distinctly arterial. 3. On rupturing a placenta while still partially adherent to the uterus, that a small quantity of dark venous blood escaped from the torn part. Thus it would appear, that in the canine species, the source of hemorrhage in cases in which the placenta is partially detached is exclusively the denuded uterine surface so long as the placenta is entire, that the hemorrhage is of an arterial character, and that a small quantity of dark venous blood escapes from the placenta on being lacerated while still partially adherent to the uterus. The results of this experiment were not, however, deemed conclusive as to the source of hemorrhage in cases of partial separation of the placenta in the human female, on account of the different distribution of the veins in the maternal portion of the canine and human placenta respectively. Their anatomical peculiarities were briefly pointed out; and in the early part of April, 1853, the author had an opportunity of performing a more decisive experiment with the assistance of Dr. Sharpey. In this, the hypogastric arteries of the uterus of a woman who had died of internal hemorrhage during labour, and in whom the placenta was partially adherent, were injected with defibrinated blood, and the organ, as well as the vessels from whence the blood escaped, were carefully noted. It appeared, on injecting the hypogastric artery, that blood escaped freely from the torn utero-placental arteries on the surface of the uterus; that none escaped from the torn uterine veins, or from the detached portion of the

Attention has been called, in an early part of the present essay, to the fact that a fluid in every respect resembling the black vomit, is sometimes ejected in dyspepsia and during pregnancy; and every one knows that, in such conditions of the system, the predominance of acid in the stomach is a very usual phenomenon; and on inquiry it will be found that, in those cases in which the effusion of this black substance took place, the acid formation was particularly noticeable. Dr. Michel reminds us, that this again is seen in certain instances of renal affections; the blood becoming ultimately mixed with the acid mucus of the bladder. The same writer, with great correctness, remarks that blood is frequently seen to be red while it oozes from the surface of the uterus, but becomes dark so soon as it combines with the vaginal secretions, which are decidedly acid.

In some of the varieties of what Dr. Carswell has denominated the *spurious melanosis*, the discoloration of the blood is satisfactorily shown to be the result of the action of chemical agents, the change taking place, as we have seen, in the vessels or cavity of the stomach, and in the cavity or vessels of the peritoneum.<sup>1</sup> Here, the modifying influence of gastric or hydrochloric acid is too apparent to be denied.

Doubtless we may explain in the same way the occurrence of the discharge of blood similarly altered from other surfaces. The acid character of the sensible and insensible perspiration, under particular circumstances, is well known; and that the skin secretes at times hydrochloric acid, was several years ago ascertained by Dr. William Lyon, of Dominica, whose observations were made on recruits arriving in the colony.<sup>2</sup> With this in view, we can readily account for the black and grumous appearance which the blood effused from the denuded cuticle, in some cases of yellow fever, has been found to assume. May not something of the kind take place in the serous membrane, also, from the formation of acid in that tissue, or through the effect of endosmosis during life, or of imbibition after death? On this subject, we are not left to conjecture. Dr. Carswell, so often referred to, who has adopted and strongly advocated this opinion, and whose experiments on the discoloration of the blood and the dissolution of the walls of the stomach by the action of gastric acid are well known, found that the influence of that acid in producing the first of these effects, is not limited to the contents of the alimentary tube. Not only, he says, is the blood that has been poured into the cavity of the stomach, or is contained in the vessels of the mucous or submucous tissues changed from red to brown or black, but likewise that of the sub-peritoneal vessels of the same organ is similarly altered. Dr. C. has also seen the same black discoloration of the blood in the sub-peritoneal vessels of a neighbouring organ, such as the liver, spleen, intestines, or diaphragm in contact with that portion of the stomach which contained half-digested food or

<sup>1</sup> Cyclop. iii. p. 99.

<sup>2</sup> Observations on Black Vomit, Lond. Med. Phys. Journ. (N. S.) iv. p. 100.

utero-placental arteries, arterial hemorrhage was actually observed to follow; that is to say, having separated the placenta by a true process of avulsion, and thereby having torn across the utero-placental arteries, it was demonstrated that such proceeding was not productive of those changes in their torn coats which are assumed to follow such operation, and by which, it is alleged, arterial hemorrhage is prevented. Upon the whole, it appeared that two things were certain; first, that no necessary relation existed between the degree of hemorrhage, and the degree of separation of the placenta; or, secondly, between the degree of hemorrhage, and the degree of contraction of the uterus: uterine hemorrhage having been variously moderate or excessive under similar degrees of separation of the placenta, and similarly moderate or excessive under the opposite conditions of relaxation and contraction of the uterus. Could it, then, be doubted, that the absence or disposition to uterine hemorrhage depended, in many cases, upon other causes than the anatomical connection of the placenta with the uterus on the one hand, or the contractile mechanism of this organ on the other? Or, further, that these were to be sought for in the occurrence of arterial hemorrhage, and the varying conditions of the utero-placental arteries, as modified by the general condition of the arterial system. Bearing in mind this view of the case, the author maintained, that we could best account for the phenomena of puerperal hemorrhages. We could understand how it might happen, that the tonicity of the arterial system being great, uterine hemorrhage would be prevented when the uterus was most relaxed, and when, consequently, venous hemorrhage would be most liable to occur—that, under the influence of morbid excitement of the heart and arteries, it might be profuse when the uterus was contracted, and when venous hemorrhage would be most effectually prevented; and that it might vary, in different cases, with the same amount of separation of the placenta.

Dr. Crisp was of opinion, that, in cases of partial separation of the placenta, the hemorrhage is not from the denuded uterus, but from the free portion of the placenta. He had been requested to see a case of Mr. Howell's in which serious hemorrhage had followed delivery, and, on examination, observed a portion of partially adherent placenta projecting from the os uteri, and was assured, from the touch, that the blood flowed from that structure. The placenta was entirely removed, and the hemorrhage ceased. He thought that abnormal position of the placenta frequently led to hemorrhage, and that the latter is quite independent of an enfeebled state of system. He attached but little importance to the experiments of Dr. Mackenzie.

Dr. Winn, on the other hand, believed that similar experiments performed on animals would ultimately set the question at rest, and, while agreeing in the author's results so far as to affirm that hemorrhage proceeds from the uterus, he differed with him in believing that the immediate source is the uterine sinuses, and not the uterine arteries. He thought that the distinction between the colour of arterial and venous blood, is sometimes liable to fallacy, since it is possible that the state of extreme nervous excitement of a patient in labour might render the venous blood of a more florid colour. A friend of his had observed, that on drawing blood from the arm of a patient labouring under pneumonia the colour was quite florid.

Dr. Murphy was quite confident, from his own experience, that, whatever may be the immediate source of hemorrhage in these cases, the flow of blood ceases on the entire removal of the placenta. He thought it important to separate these practical facts from any theories. He then referred to the two classes of opinions; the one, held by a section whom he termed the Protectionists, that it proceeds from the uterus; and the other, supported by the reformers, that it flows from the placenta; and believe both to have built their theories upon hypothesis, and not upon experiment. He congratulated the author on having taken a first step in the required direction, and advised him to repeat his experiments again and again. He, however, cautioned him to bear in mind the great difference which exists between vital and dead structures, since, after death, the parts lose their tonicity, and any plugs which may have once been formed remain, and prevent the passage of the injection; but, in the living structures, any new flow of blood may detach the plugs, and permit the vessels



gastric acid. It is not difficult to understand that blood effused into the cavity of the peritoneum will undergo the same change of colour as that which takes place in the fluid contained in the vessels. Dr. C. produced effusion of blood into the cavity of the peritoneum around the stomach in several animals, and was thus enabled to witness its conversion from red to brown or the deepest black. He took a portion of stomach containing gastric juice, placed it on a coagulum of blood, or kept it in close contact with a portion of intestines on which there was a greater or less number of vessels filled with red blood. In both cases the blood assumed a brown or black colour, no doubt from the acid having been carried from the interior of the stomach by imbibition.<sup>1</sup>

But be this as it may, the formation by the gastro-enteric mucous surface, in the progress of yellow fever, of an acid fluid of sufficient strength, and in sufficient quantity to affect the blood in the way which the same kind of agents do in the hands of the chemist, cannot be matter of astonishment. We know that such a fluid is always found in the stomach during the digestive process in the state of health. Dr. Prout, so early as 1823, announced as the result of his experiments, that such was the fact; and he found that this acid was free, or at least unsaturated, muriatic, or hydrochloric acid. Bernard, Thompson, and others, have thought that this acid was the phosphoric; by others it has been regarded as the lactic. But it may be safely said, that subsequent experience has confirmed the opinion expressed by Dr. Prout, as to the existence of the hydrochloric acid, the proceeds of the chloride of sodium of the blood, which, while it contributes that acid, at the mucous membrane of the stomach, to the gastric fluid, leaves free soda to be carried to the liver by the veins of the stomach. In fevers, acid is preternaturally formed. Dr. Stevens (322), in speaking of a case of malignant lake fever, which he saw in 1830 at Rochester, N. Y., in company with Dr. Henry, a distinguished physician of that place, says:—

“The stomach was so excessively tender that the patient could scarcely allow even the slightest pressure to be made on the epigastrium. The tongue was exceedingly foul, and when I applied a small piece of moist litmus paper to this organ, the test was reddened almost as suddenly as if it had been dipped into a strong acid. The same thing occurred when litmus paper was dipped in the fluid ejected from the stomach.”

A similar change takes place, even more uniformly, in the yellow fever. It does so long before the appearance of black vomit; and we have seen that the white ropy fluid frequently ejected at the close of the second stage is usually intensely acid. Can we, when bearing these facts in mind, and recollecting the effect of acids on the blood *out* of the body, fail to discover a ready explanation of the formation of black vomit?

But it is not less possible that the change may take place, not in all cases,

<sup>1</sup> *Op. cit.* iii. p. 100.

Isom Harvey, of Centreville, was brought to our office. His age was nine years and four months. According to the account given us, he had had some affection of the bladder since he was ten or twelve months old. His sufferings for some years had been very great, with a constant inclination to keep his hand upon his penis and pull the prepuce. I sounded him, but could detect no stone, owing probably to his having just ridden six miles on horseback. I gave him potas. nit. 5 grs., cubebs 2 grs. four times a day. In about a week he was again brought to the office. His symptoms were considerably mitigated; but sounding was again ineffectual. The same treatment was continued. We heard no more of the case until the 6th of January, 1843, when the grandfather of the boy again called on us.

7th. I visited the patient at his residence at Centreville, and found his symptoms very much increased in every respect. His pain, or I should rather say, his agony was almost constant. He was unable to retain his urine at all; and much of the time he was digging with his fingers into his fundament. On sounding him I detected a stone. The bladder was exceedingly irritable, and much mucus was passed with his water. His clothing was constantly wet with his urine, his countenance was haggard, pulse feeble and frequent, appetite poor, bowels regular.

I ordered Potas. nitr. gr. v, cubebs gr. ii every six hours. This was continued for one week, when a mixture of copaiba and camphor water was alternated twice a day with the preceding. Under this treatment our little patient rapidly improved. His sufferings gradually intermitted, and his health and general condition were so much improved by the close of the second week, that I thought that Tuesday the 24th inst. might be appointed for the operation.

24th. In the presence of Dr. Swain, of Centreville, and Drs. Ruby and Swallow, of Abington, and four students, I performed the lateral operation of lithotomy. Dr. Swain was my principal assistant. On the previous afternoon the patient had taken a dose of Epsom salts, which on the morning of the operation had produced four free evacuations.

It is useless to detail the preliminary arrangements of the operation, or the mode in which the operation was performed. Suffice it to say, there was nothing unusual in either of them. But the points to which I wish particularly to draw attention: are first, an accident which occurred during the operation; and, secondly, the remarkable contraction of the bladder referred to at the heading of this article.

After the rectum had been exposed, in continuing the incisions down towards the urethra, the irritation caused by the knife produced a sudden renewal of the operation of the cathartic medicine; in an instant the rectum distended so suddenly as to cause it to come in contact with the knife, and a small incision was made in the bowel just above the sphincter ani. Perhaps there was a degree of unskilfulness on the part of the operator; it may be so; but the filling of the rectum was as quick as lightning, and the accident occurred before there was time to give it a thought. Subsequently, several free evacuations of the bowels took place, and a small portion of the feces passed through the wound in the rectum. After the bladder was opened the finger was inserted and the stone was felt. On inserting the forceps, the bladder suddenly contracted and forced the stone behind the pubes where it was firmly retained by the contraction of a portion of the bladder around it, while the rest of the bladder became relaxed. The forceps were withdrawn and the finger inserted. It was with much difficulty that the stone was disengaged from behind the pubes; but when this was effected the bladder became entirely relaxed. The

as some writers have affirmed,<sup>1</sup> but in some, before the blood has been effused into the cavity of the organs, and consequently in the capillary vessels. Its discovery in these, as mentioned in a former page; its frequent and quick renewal; its effusion in an apparently formed state from external and visible surfaces, undoubtedly lend some support to the belief. But if such is the case, if the vessels through which the black vomit exudes, really modify the blood in its transit to the surface, and, in that sense, may be said to secrete the former—for the idea of a regurgitation, once entertained by or attributed to some of our physicians,<sup>2</sup> can scarcely be seriously thought of—they cannot, from all we have seen, be admitted to do so otherwise than through the agency of an acid, which must reach the blood by the process of endosmosis. Whether this suggestion will be ever confirmed; whether the acid being in the stomach and intestines finds its way into the bloodvessels which subsequently throw it off in its formed state; or again: whether the acid is formed in the very capillaries which contain the blood modified, as some have suggested, remains to be verified; for, so far the opinion is mainly conjectural. In the meanwhile we cannot go astray, if, with able pathologists and accurate experimentalists, we regard this change, when it takes place in the capillaries, as the effect of a cadaveric alteration. We have seen that, in the experiments of Dr. Carswell, a peculiar change in the colour of the blood contained in the gastric vessels is observed to accompany the dissolution of the coats of the stomach, and that this is not less obviously the effect of the same cause—the agency of the gastric acid. We have seen that, in some experiments, when the digested acid food, or the gastric acid alone, is removed from the stomach in which it was formed, and put into another stomach, or other organs, the vessels of which are conspicuous and filled with blood, the fluid very soon undergoes the same change of colour noticed when the chemical agent is placed in contact with it; and also that the same effect is produced in the peritoneum when a portion of the stomach, containing gastric juice, is kept in close contact with a portion of the intestine in which there was a greater or less number of vessels filled with red blood. In all these cases, the dark colour of the blood could not have been produced otherwise than by the passage to it of an acid by means of cadaveric imbibition. In corroboration of this, it may again be stated that, in the experiments of Dr. Carswell, the discoloration of the blood did not occur when there was no softening or chemical dissolution of the coats of the stomach; that the discoloration of the blood was observed only in the vessels distributed over or situated near the parts of the stomach which were softened; and that both changes were, *cæteris paribus*, nearly in the same ratio as to degree and extent.<sup>3</sup> It need scarcely be remarked that this kind of softening is cadaveric. To this, let it be added that, in the autopsies made by Dr. Michel in 1849, the bodies were

<sup>1</sup> Waring, *Fever of Savannah* in 1820, p. 52. Kelly, *op. cit.* 385.

<sup>2</sup> Stevens on the Blood, p. 330.

<sup>3</sup> *Op. cit.* p. 100.

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opened immediately after death, while yet warm, and that this able physiologist never noticed the slightest trace of black matter in the vessels. The change, therefore, when it takes place, must do so after the acid mixed with the blood in the stomach has remained some time in contact with the lining membrane of the organ, and is the more readily produced because the absence by exfoliation of the epithelial covering, and the softening of the membrane, which so generally occur, increase the facility of the passage of the acid through the coats of the delicate capillaries.

The peculiar characters, and particularly the dark hue of the black vomit, may, and probably does, as well as its manifest disposition to exude from the capillary vessels, depend, in some measure, on the diseased condition of the blood prior to its mixture with the acid fluids of the stomach, or to its undergoing, while in the circulation, the modifying action of such acids. That this is the case, has been surmised by competent authorities,<sup>1</sup> and may be inferred from the fact that, at the period when the black vomit usually sets in, the blood is, in most cases, of a dark colour, and has lost a large share of its adhesive and coagulable properties; and that clinical experience and physiological experiments have shown that, when in that diseased condition, either from the agency of ordinary and powerful morbid and acrid poisons, or from the artificial introduction into the circulation of putrid substances, the blood manifests an equal disposition to exude from the same parts, and exhibits often many of the peculiar characteristics of the black vomit. Well founded, however, as this explanation may appear, it cannot be concealed that it is not applicable to all cases; for we not unusually find genuine black vomit occurring contemporaneously with effusion of florid and coagulable blood from the nostril or other parts;<sup>2</sup> a circumstance it would be impossible to account for, were an alteration of the circulating fluid essentially requisite to enable the latter to furnish materials towards the formation of the black vomit, and to impart to that fluid the disposition to escape from the capillaries. But such cases are comparatively rare. Most generally, black vomit is associated with altered blood, and the occurrence of the aforementioned cases will be found to be due to the early formation of acid fluid in the stomach or bowels, and the consequent transformation in those organs or their capillaries of the blood therein contained into genuine black vomit, while the rest of the circulation remains unimpaired, or nearly so.

It has been supposed that the discharge of the black vomit from the stomach, like that of the same matter, and of ordinary blood from other outlets in the yellow fever, is always the result of a morbid process of an active kind; in other words, that it is an active, not a passive hemorrhage.<sup>3</sup> And there is little doubt that this view of the subject receives support from the

<sup>1</sup> Imray, p. 91; Evans, p. 249; Blair, p. 81; Levacher, pp. 82, 83; Pringle, 197; Hunter, p. 64.

<sup>2</sup> Blair, p. 81.

<sup>3</sup> Catal, p. 11.

fact, that the effusion of the fluid is often preceded by an inflammatory irritation of the surface whence it proceeds, or by a greater or less inflammatory excitement of the system at large, both of which appear incompatible with the existence of an atonic state of the capillaries. Nor is it less certain, that a fluid exactly resembling the black vomit is, as we have seen, formed in cases of poisoning or external injuries, under the direct influence of active inflammation; and that, in some of these cases, recovery occurs, convalescence is rapid, and the patient is restored to health without having had recourse to tonics and stimulants, or any means calculated to correct the atony of the vessels.<sup>1</sup> But the occurrence of such cases only proves that the effusion of a substance like the black vomit may take place under the influence of an active state of the capillary vessels, but not that it never occurs under the influence of a contrary condition of the same vessels. With these facts before us, we cannot admit that, when in the yellow fever the black vomit occurs, the hemorrhage must be viewed as of an active kind. So far from this, the circumstances under which the discharge takes place in that disease; its connection with other symptoms, which portray an atonic state of the system; its analogy to other hemorrhages, undoubtedly of a passive kind, must lead to an opposite conclusion. The effusion of black vomit, as well as the discharge of blood from other surfaces, takes place generally at a period of the disease when the powers of the system are exhausted and all its vital energies are in abeyance, and when all irritation or inflammation, if it existed before, has subsided. In many cases, the existence of such inflammation prior to the effusion is problematical. The discharge is attended with passive exudation of a similar fluid, or altered blood, under the cuticle; it is accompanied with symptoms indicative of prostration and atony of the sanguiferous and other organic systems; it is preceded and attended by other hemorrhages, the sources of which are visible to the eye, and as regards the passive nature of which there can be no mistake; while, in some instances, the exhalation and discharge of the fluid continue after death, when all conditions of activity have, of course, subsided; and the limited number of cases that recover after the accession of the black vomit, do so generally under the influence of means calculated to restore tone to the capillaries, and to impart strength to the system at large.<sup>2</sup> From all this we may perceive the propriety of coinciding with those who regard the effusion as connected with a relaxed condition of the vessels on the surface whence it proceeds.

The black vomit being recognized to be blood acted upon by the acid contents of the stomach, we have no difficulty in perceiving that much of the difference it presents in regard to its physical appearance will depend on the manner in which the blood is effused into the stomach—whether drop by

<sup>1</sup> See, for such, Dr. Monges's Remarks, N. A. Med. and Surg. Journ. ii. p. 60.

<sup>2</sup> Blane, 410; Chervin, Catel. p. 11; Imray. p. 91; Harrison, p. 148; Kelly, 385; Levacher, p. 82.

drop, or in a stream—and on the degree of acidity of the gastric secretion, or the quantity of serous fluid it meets in that organ. It has been found, for example, that whenever blood is exhaled therein in a quantity proportionate to these secretions, it exhibits a black colour, while the aqueous portion is limpid, or clear green. If there be a slight excess of blood—more than enough to neutralize the acid—instead of black, we have a nut-brown, a chocolate or reddish matter, and the watery portion, when filtered, is of a rum, brandy, or red colour. If the hemorrhage be great, the fluid presents all the characteristic marks of blood, either with or without admixture of black vomit. Dr. Nott<sup>1</sup> has often seen a tablespoonful or two of the “coffee-grounds” at the bottom of the basin with a pint or more of pure blood. The addition of a little bile, which in some cases doubtless occurs, will impart a greenish tinge to the aqueous portion. All these varieties of colour may be, and have been imitated in the artificial black vomit. A very small quantity of blood oozing gradually in a minutely divided form, and mingling slowly with the secretions of the mucous membrane of the stomach, will make a large quantity of black vomit. Dr. Nott says that, judging from his experiments, he thinks a tablespoonful would make a pint (283).

While such is the appearance and the nature of the black matter ejected from, or found in, the stomach, the intestines give passage, as we have seen, to substances which bear a strong resemblance to the former, and are, to all intents and purposes, analogous to or identical with it. So far as the source of the black vomit is concerned, no difference of opinion at present exists. It proceeds from the lining membrane of the stomach itself, and from no other part. But in reference to the surface whence that passed per anum, or found in the intestines after death, proceeds, doubts have been entertained—some maintaining that it is the product of the intestines themselves, as well sometimes of the glandular organs under the dependence of the latter; others, that in general it has reached them through the pylorus from the stomach.<sup>2</sup> To this last source it has been more particularly referred when the discharge occurs towards the fourth day of the disease, or later; when it is voided some time after black vomiting has set in, and especially when, from the absence of symptoms indicative of inflammatory irritation or congestion, we may infer that the intestinal tube has remained unimpaired. In this opinion, however, no one who takes into consideration all the circumstances connected with, or attending, the ejection of black matter from the bowels can concur. That the black matter found in or voided from the intestines is sometimes—we may even say often—of gastric origin, there can be no reason to doubt; for whenever the matter is limited to a part of the intestines it is found only in the jejunum. But however true this may be; however reasonable or proper the admission may be regarded; and whatever may be the

<sup>1</sup> Am. Journ. ix. p. 282.

<sup>2</sup> Rochoux, p. 360; Louis, p. 102; Miellet, *op. cit.* p. 346.

degree of reliance placed on the accuracy of the signs by which that origin may be inferred, we must not explain in that way all the cases of alvine discharges of black coffee-ground, or dark sanguineous matter which occur in that disease; for there are facts enough to show, beyond the possibility of denial, that such dejections are referable; in the greater number of cases, to morbid processes located in the intestines themselves and their dependant organs.<sup>1</sup> Admitting, as we are bound to do, that such evacuations consist in part of altered blood and vitiated secretions, usually mucous, with sometimes an admixture of bile; considering that some of these secretions proceed necessarily from the abdominal glands; that others are as naturally found in the intestines as in the stomach; and that there can be no reason to doubt the existence in the intestines, any more than in the stomach, of the hemorrhagic tendency so characteristic of the yellow fever, we might *à priori* conclude, that the ejections in question proceed from the former as often, at least, as from the latter organ; at any rate, that no reason exists why they should not do so. But we have stronger proofs than that. If the contents of the small intestines have an alkaline reaction; if the pancreatic juice which is poured into the duodenum is invariably of the same character; if, in these organs, no acid like the gastric is found to exist; and if, therefore, from the existence of the former chemical agents, and the absence of the latter, it may be argued that the blood cannot be modified in the way necessary to cause it to assume the character of black vomit, it may be remarked that, in lieu of gastric or hydrochloric acid, and to counterbalance the alkaline influences above noted, it encounters lactic acid in the cœcum, and sulphuretted hydrogen or carbonic acid in various portions of the tubes, all of which impart to it an acid reaction, and are thereby fully able to produce the changes in question.<sup>2</sup>

Black matter having all the ordinary characters of black vomit, has been often found in the small and large intestines in subjects whose stomachs contained none. Louis, among others, mentions two cases of the kind in which the small intestines were the seat of such an exhalation while the stomach was empty. One of these subjects never had vomited. He also mentions a case in which black matter existed in the large intestines, while the stomach was, as in the former, free from it.<sup>3</sup> Similar instances have been described or alluded to by Dr. Lewis, of Mobile, and others. In the case just referred to, says Lewis, "there was no black vomit, so that the black matter of the large intestines may be considered in this case as the result of the exhalation of the mucous membrane of the colon; and from the facts in this and the preceding articles, it would seem to follow that the mucous membrane of the stomach, that of the small and that of the large intestines, in an undeter-

<sup>1</sup> Evans, p. 248; Arnold, p. 38; Nott, *loc. cit.* p. 283; Louis, p. 103; Audouard.

<sup>2</sup> Carswell on Melanosis in Cyclop. of Pract. Med. iii. p. 101; Michel, Ch. J. viii. p. 346.

<sup>3</sup> Researches on the Yellow Fever of Gibraltar, pp. 103, 112.



ART. II.—*Account of a Malignant Fever which occurred in Brandywine Village, Delaware, in the Summer of 1853.* By LEWIS P. BUSH, M. D., of Wilmington, Del.

IN the month of July, 1853, a disease of a malignant and unusual character, and of remarkable fatality, made its appearance in Brandywine village, Delaware. The object of this communication is to exhibit the characteristics of this disease, and the circumstances under which it occurred.

The following description of the locality may contribute to a correct appreciation of the subject. The village contains about six hundred inhabitants, and is situated on the north bank of the Brandywine Creek, which separates it from Wilmington. Both sides of the stream, for a distance of about six hundred feet, are occupied by the flour-mills; and the water is deep enough, at high tide, to float the largest sloops. Both banks are bluff, and extend three-quarters of a mile east of a ship-yard which is at the eastern extremity of the village, and will be described in the course of the article. The whole length of the village is about one-third of a mile. The bed of the stream here is rocky, and is exposed at very low water; and tidewater terminates a few hundred feet above the mills. The nearest marsh-flats to the village are one-third of a mile below it, and consist of well cultivated meadows, reclaimed long since, together with one or two acres unreclaimed, over which the tide ebbs and flows.

Almost the only form of miasmatic fever which occurs along the Brandywine Creek, either near the village or on its last mile, where it is skirted by cultivated alluvium, is simple intermittent. Very rarely, either there or along the Christiana Creek—into which it empties about two miles below the village—does remittent fever occur; and a strongly marked case of bilious remittent fever is seldom seen.

The history of most of the cases below reported, was furnished to me by Dr. S. Miller, who was in attendance upon them either alone or in consultation with Drs. Askew, Porter, or myself.

CASE I.—Ezra B., blacksmith, æt. 18 years, robust, muscular, and active; had been engaged constantly at his employment in Wilmington, about one mile from his residence, which was in Brandywine, in the centre of the village, and well shaded by trees. The situation of the house was dry and elevated, and had nothing about it objectionable in a hygienic sense, except an offensive stagnant gutter in front; which, however, was common to all the houses of the neighbourhood.

On July 24, early in the morning, he went in an open boat to Newcastle, a distance of eight miles, in company with several men, for the purpose of bringing up thence the sloop *James Denny*, which had been lying there several weeks, and which needed repair. She was in a leaky condition, and her cabin—in which most of those on board spent one or two hours on the passage up—was unpleasant from the effluvia of the bilge-water which she

(A.) Fig. 1.



(C.) Fig. 3.



(E.) Fig. 5.



(F.) Fig. 6.



(B.) Fig. 2.



(D.) Fig. 4.



Fig. 7.



Fig. 8.



Fig. 9.



# PLATE II.

Fig. 10.

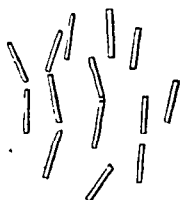


Fig. 11.

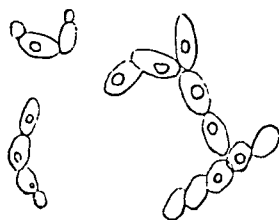


Fig. 12.

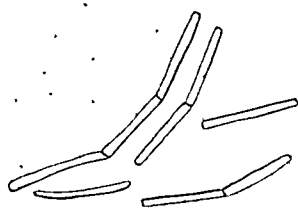


Fig. 13.

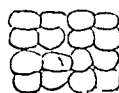


Fig. 14.

Fig. 15.

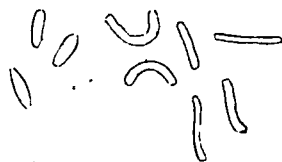


Fig. 16.

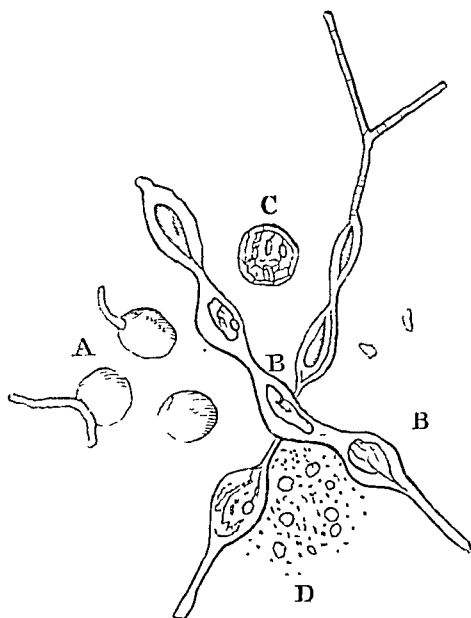
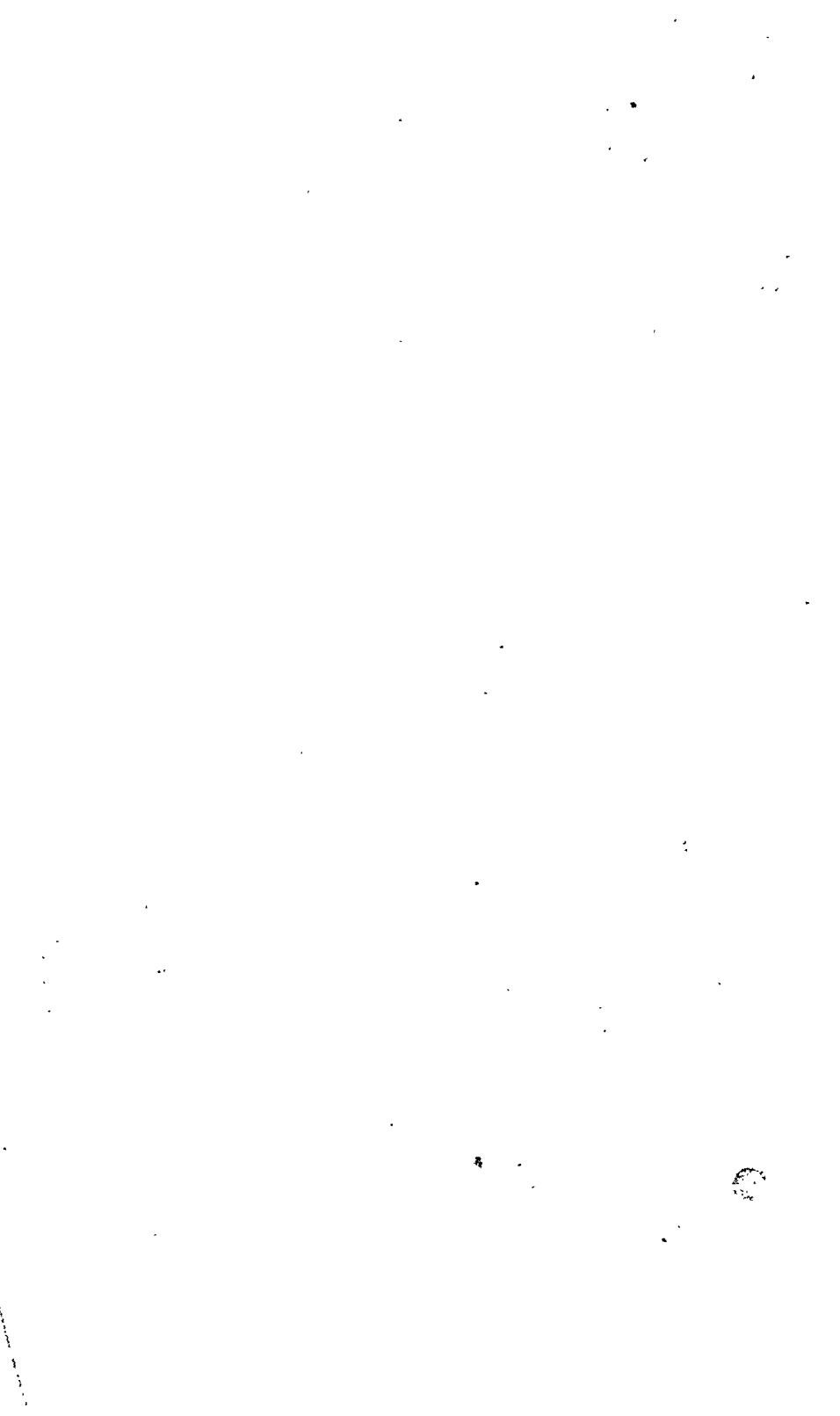


Fig. 17.





## EXPLANATION OF THE PLATES.

## PLATE I.

SPECIMEN A.—Fig. 1: *a.* Transparent circular or tabular crystals, simple or arranged in radiating groups. *b.* Isolated brownish granules. *c.* Groups of brown granules; degraded blood-corpuscles. *d.* Unchanged blood-corpuscles.

SPECIMEN B.—Fig. 2: *a.* Groups of brown granules; blood-corpuscles in all stages of degradation. *b.* Groups of blood-corpuscles. *c.* Unchanged blood-corpuscles. *d.* Debris of epithelial cells. *e.* Minute crystalline bodies.

SPECIMEN C.—Fig. 3: Brown granules, apparently blood-corpuscles in various stages of degradation, mostly isolated; a few in groups.

SPECIMEN D.—Fig. 4: *a.* Blood-disks, or corpuscles, which have entirely lost their colour, but preserve their form. *b.* Fine brown granular matter, produced from the colouring matter of the blood-corpuscles.

SPECIMEN E.—Fig. 5: Blood-corpuscles of a light brown hue, and granular hematine.

SPECIMEN F.—Fig. 6: Same material with a few oil-globules, and a yeast fungus.

Fig. 7: A few lamellar cells, united like the hexagons of a tessellated pavement, with their nuclei and granular contents. Below, to the right, a group of epithelial cells somewhat masked by granules and hematine.

Fig. 8: Numerous columnal epithelia; milk-globules seen in great numbers amidst deformed blood-disks and granules; the patient had taken milk and lime-water.

Fig. 9: Pasty dejections; bluish mucus from the intestines, containing numberless transparent epithelial scales; little colouring matter of the blood, and no blood-disks.

## PLATE II.

Figs. 10 and 12: Vegetable growth in linear, or rather stint joints; the sections commonly separated, but often united by a hinge.

Fig. 11: Specimen of the torula.

Fig. 13: Do. do. sarcina.

Figs. 14, 15: Minute algoid bodies.

Fig. 16.—A: Large circular sporules, usually single, sometimes in rows, and giving origin to slender threads or filaments. B. Branched and multiform threads of a fungus, usually occurring in bunches. C. Many compound cells, having the appearance of *sporangia*. D. Irregular bodies, frequently of a brown colour, and resembling somewhat blood-disks shrivelled and discoloured, but soluble in acetic acid.

Fig. 17: Artificial black vomit formed with mucus, blood expectorated from the lungs, and diluted hydrochloric acid; spheroidal cells are seen; a few blood-corpuscles unaltered, and some mucous globules. On the right side is a species of filiform algæ, and below a series of ovoid bodies of unknown nature.

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contained. E. B. complained of headache when he reached home in the evening, which he reasonably referred to exposure to the heat of the sun—to which he was unaccustomed—the mean of the thermometer on that day being  $77\frac{1}{2}$  degrees.

On the three succeeding days he went to work as usual, but returned on the third, after dinner, not able to perform his duties. He complained of headache during the evening, and passed a restless night, with fever.

Thursday, 28th. Was costive, and took a dose of cathartic medicine, which operated freely. No relief of urgent symptoms following, Dr. Miller was called to see him in the evening; and gives the following report of the case:—

“I found headache, thirst, skin of moderate heat, tongue slightly coated, dry in the centre, red at point, slight tenderness at epigastrium, and some pain in the bowels—supposed from medicine.

“29th. Says he is ‘first rate;’ had rested better than on night previous; pulse 80; tongue moist; one stool during the night; head and bowels easy; towards noon showed symptoms of delirium; refused medicines, and resolutely persisted in going down stairs.—Evening. Delirious, moaning, turning from side to side; pulse 100, easily compressed; heat of head but little increased; feet and hands cool; slight moisture on the surface; some evidences of nausea, but no vomiting; spat some bright blood from his mouth; refused anything whatever internally.

“30th. Delirious, and very restless through the night; pulse 100; gums and fauces very red; tongue moist; bowels slightly moved; urine retained; skin dusky, cool and clammy.—8 o’clock, evening. Through the day symptoms much as above; skin now cold, dusky; head cool; pulse quite imperceptible at wrist, can barely be detected in the temporal artery; throws himself about the bed with decided force, and endeavours to get away; no evident intelligence; keeps his eyes closed tightly, pupils natural, contractile.

“Died at  $4\frac{1}{2}$  o’clock A. M., July 31; sick  $3\frac{1}{2}$  days.”

*Inspection, twelve hours after death.*—Moderate rigidity; colour of skin dusky, as in life—not yellow; embonpoint good, no abdominal distension. On opening the cranium, found slight effusion of serum beneath the membranes, which were readily separated from the brain; bloodvessels moderately distended; small ramifications of the arteries more developed than natural; substance of brain of usual firmness, and exhibited blood-spots not very numerous, or strikingly large when cut into. Ileum and jejunum both had dark brown contents, more or less abundant at different points. Peyer’s glands normal; mucous membrane yielded strips several lines in length. Stomach contained one and a half to two pints of dark brown, somewhat thick fluid; mucous membrane rather firmer and thicker than natural—gave strips three or four lines long in the larger curvature, where there was not much injection; in the smaller curvature there was more injection, and the membrane gave shorter strips. Liver of normal size; when cut into, showed the acini more distinct, and the intermediate tissue more developed than natural, giving the exposed surface the appearance of sliced rhubarb. Its hardness was remarkable, so that it could with difficulty be torn by the fingers. The gall-bladder was contracted and corrugated, containing but little bile. The bladder was found distended with urine. The contents of the stomach were microscopically examined by Dr. Bullock, who gives the following result—it will be recollected that nothing had been swallowed for two days before death, excepting a little water:—

*Dr. Bullock’s examination of the contents of the stomach.*—“The matter presented for examination was composed of two portions, a clear fluid, and a

suspended granular matter of a deep brown, almost black colour, which precipitated in part upon standing. The fluid reddened litmus strongly. Under the microscope, the morphological elements presented were red blood-corpuscles in profusion, which had undergone but little apparent alteration, and occasional cells of cylindric epithelium; these floated in a transparent fluid.

"Besides the above, there was abundance of an amorphous granular matter of a dark brown colour, strongly resembling in appearance the bile pigment. Unfortunately, no tests were made for the purpose of ascertaining whether this granular matter was really the granular matter of the bile, or composed of disintegrated and altered blood-corpuscles.

"No other elements of importance were discoverable.

W. R. B."

CASE II.—The next case which occurred was that of James H., a miller, æt. 30 years, healthy; had been engaged, August 4, A. M., in one of the Brandywine mills, in hoisting out of a sloop, and storing away a load of dusty wheat brought from Dover, Delaware; became much heated, mean of thermometer being  $77\frac{1}{2}$  degrees; drank much cold water, and ate freely of apple-dumplings at dinner. Soon afterwards had pain in the stomach, and vomiting. Dr. M. saw him in the evening; found him labouring under headache, hot skin, quick pulse, great thirst, epigastric pain, costiveness, and vomiting every few minutes such drinks as he took.

"Aug. 5, A. M. Had passed a restless night; had less sickness and headache; skin still hot; thirsty; tongue red with projecting papillæ, and inclining to dryness; tender epigastrium; urine voided at long intervals; bowels moved.—Evening. No material change.

"6th, A. M. Occasional short naps, but generally restless; some epistaxis; hiccough; vomiting a dark flaky substance; pulse less frequent; less heat of skin; declares himself better, and expects to be able to work on Monday, the 8th.—Evening. Through the day the hiccough left, but now has returned; still epistaxis; no urine passed to-day; used catheter, and he voided from eight to twelve ounces of dark red water; aspect of the case evidently worse.

"7th, A. M. More exhausted; brown discharges from stomach ceased, and now vomits only the substances swallowed; pulse more frequent; occasional epistaxis; pain in epigastrium ceased; thirst.—Evening. Increasing debility; stimulants internally and externally produce no effect; bowels moved by enema, discharge dark brown.

"8th, A. M. Much epistaxis during the night; was very restless, delirious, and requires much exertion to keep him in bed; hiccough; tongue dry in centre; nostrils plugged, and bleeding stopped.—In the evening was worse.

"Tuesday, 9th. Another disturbed night; hands and feet cold; skin clammy and cold; head hot; pulse more frequent; nausea; skin slightly yellow. Died at 8 o'clock P. M. Became more yellow after death. Was sick five days five hours. No autopsy."

CASE III.—No full note was taken of the third case. It was that of an apprentice to Jonathan Z., a ship-carpenter, in Brandywine, and the first which occurred in his family. He complained of being unwell after having been engaged in caulking a vessel's hold, where it was very hot, and the bilge-water, as he said, very offensive. His symptoms were headache, fever, pulse not very frequent, pain in back and limbs, vomiting, some tenderness of epigastrium, thirst, costiveness, urine passed at long intervals. About the third day, a remission of symptoms occurred, and he came down stairs; the same night he grew worse; vomiting returned; he became delirious and



slightly yellow; and died seven days eighteen hours from the commencement of the attack.

CASE IV.—“Mrs. H., wife of Case II., not robust, had been unwell for several days, apparently from fatigue and anxiety. Was taken with a chill August 11, A. M., followed by considerable fever, and at 4 o'clock P. M. when Dr. M. saw her, was in a free perspiration; pulse 120; cephalalgia; some thirst; slight coat with moisture on the tongue; no epigastric pain; bowels costive. Rode in the evening to her husband's funeral.

“August 12, A. M. Pulse 116; still pain of head on left side; thirst; skin dry; had a restless night; constipation; some nausea.

“13th, A. M. Had several dark stools; passed urine; pulse 115; tongue becoming dry in the centre; respiration more hurried; other symptoms as before. Four hours afterwards she was seized with convulsions, and died in an hour; skin slightly yellow before death, and deepened afterwards. She was sick two days seven hours. After death, a black matter escaped from the mouth and nose.”

CASE V. may be briefly described as follows: *Æt.* 8 years, was taken ill on August 13, having eaten watermelon freely. He lived on the same street, and nearly opposite Case I.; but spent much time about the ship-yards.

“He had bathed five times, the day before, in the mill-race, having felt quite well; mean of thermometer 85°. Was taken with vomiting, headache, hot skin; pulse 100; free perspiration; tongue but little coated, moist; bowels costive; slight pain in epigastrium; thirst considerable; very restless.

“August 14. Less vomiting; but other symptoms as above.

“15th. Disposition to delirious singing; bowels loose, light-coloured stools; restless through the night; quite delirious and unintelligent; eyes injected. In the evening became opisthotonic, with occasional convulsions, and died 17th, 5 o'clock A. M. A little blood oozed from his mouth shortly before he died. Sick three days seventeen hours.”

CASE VI.—“Mrs. M. Z., wife of Jonathan Z., *æt.* 42 years, awoke at 2 o'clock A. M. August 27, with a desire to vomit, headache, thirst, aching sensations in back and limbs, and pain in bowels. Had vomited once slightly before I saw her at 7 o'clock A. M. and had two stools. Had had no premonitory symptoms. Found pulse 124; skin hot and dry, except the forehead, which was moist; tongue dry in the middle; face flushed; forehead very painful; feet cool; nausea; and restlessness. At 10 o'clock A. M. more comfortable; no pain in bowels; pulse 124; slight perspiration; no nausea.—7 o'clock P. M. Pulse 114; tongue moist, with a whitish thin coat; feet cool; head very painful; no stool through the day; skin warm and rather dry; mind well balanced; some restlessness.

“August 28. Restless night; pulse 104; tongue moist; face flushed; rather less pain in head; one stool in night of dark-brown colour; feet cool; skin dry.—4 o'clock. Some moisture; urine passed freely; no pain on pressure over epigastrium or bowels.—10 P. M. Feels better; two stools; eyes still injected; less pain in head; pulse 100; tongue moist, red point; slight nausea.

“29th, 9 o'clock A. M. Pulse 102; slept but little; forehead more comfortable; tongue moist; skin dry; less pain in back and limbs; feet warm; some sordes on upper front teeth; one small dark-coloured stool.—1 P. M.

Disposed to sleep; eyes considerably injected; pupils natural; no nausea; no pain anywhere; rational.—9 P. M. Pulse 100; complains of sore throat for the first time; one stool, dark; no pain in head unless quickly moved; feels tired and exhausted; urine regularly passed.

"30th, 9 A. M. Pulse 100, less force; skin of more natural heat; eyes red and turbid; face appears swollen; disposed to lie quiet and doze at intervals; no pain; feels more exhausted; throat very sore; can scarcely swallow; mind clear.—4 P. M. Pulse 86; stronger; feet warm; stools thin and brown; for the first time regurgitates a dark flaky substance from the stomach. About 8½ o'clock a copious discharge of blood took place from the mouth during an effort to change her bedroom, after which death took place in about three hours. She lived from the attack three days nineteen hours. No yellowness before or after death."

CASE VII. was a sister of Case VI. She went from Wilmington to nurse her sister and the apprentice boy. Was a healthy woman, 40 years of age. She sickened on the 30th of August, the day her sister died, with headache, vomiting, pain in back and hips, and symptoms generally as in the case of her sister.

September 2, noon. Conjunctiva swollen and watery looking as if inebriated, dirty yellow, injected and ecchymosed; and remarkably inexpressive. Cheeks apparently swollen, not flushed; no heat of head, but some pain, and desires cold applications there; tongue slightly coated, colour of tip and edge natural; some pain in loins; none in stomach or bowels when she is undisturbed, but very sore on pressure; abdomen feels doughy; pulse 86, soft, weak; occasional tendency to nausea; bowels natural; thirst considerable; great tenderness of the skin over tibiae. In the evening, had vomited a small quantity of brown fluid matter, which became flaky on standing undisturbed; other symptoms much the same; moves readily in bed; and does not feel much prostrated; has had throughout a deep, slow respiration.

3d, 8 o'clock. About 9 o'clock, last evening, began to vomit copiously of the brown fluid, but it ceased through the night, and returned again this morning. In appearance, it resembled fine-cut tobacco chewed and thrown into a fluid of a light-brown colour. This flocculent portion subsided, and was not abundant compared with the whole quantity vomited. Passed one stool, semifluid and ash-coloured; tongue as yesterday; skin slightly yellow about the face and breast; is more dejected; feels great prostration; pulse 90; quite weak; thirst moderate.—4 P. M. Has begun in the last few hours to vomit or regurgitate bloody fluid; has more yellowness of surface; refuses medicines; intelligent.

Died on the 4th. Was quite yellow after death.

CASE VIII.—The next case occurred in the same family. The patient was aged 82 years. She had been indisposed during the whole time since Mrs. Z.'s attack, but on September 7 grew worse, complaining of nausea, headache, fever, delirium, deep yellow skin; no brown matter vomited; slight injection of eyes; moist tongue; and constipated bowels. She died in five and a half days.

Four other cases occurred in the same family.

CASE IX.—The ninth case was a youth, aged fifteen years, seized September 10, in the night, with nausea, vomiting, headache, and fever, and other symptoms strongly resembling those of his mother, Mrs. Z. In fifty-eight hours, dark flaky vomiting came on, and also epistaxis profuse, in spite of

plugging the nostrils; pulse at first 120, afterwards 100, weak; slight injection of eyes, pupils natural; delirium commenced on the third day; change of colour not marked. Lived three days and seven hours.

His brother, aged fourteen years, was attacked at the same time in the same manner; but, after twenty-four hours, his symptoms gradually subsided and he convalesced.

About the same time, Jonathan Z., their father, was suddenly attacked at midnight with nausea, a sense of fulness at the epigastrium; headache and fever. After walking about for two days, he grew more unwell, and went to bed for about the same period, after which he slowly convalesced.

The last case occurring in this family, if not on the Brandywine, was a niece of Mrs. Z., who had been engaged in nursing her. She was attacked suddenly but not violently with headache, nausea, and vomiting; muddy conjunctiva, hot skin, and restlessness. At the commencement of her attack, she removed to Wilmington. Her symptoms continued mild; but on the fifth day she discharged several times from her stomach a light brown fluid, with a flaky deposit, which her physician, Dr. Askew, considered the same as the brown vomiting of the other members of the family. The vomiting, however, did not continue, and she convalesced.

These were all the cases of this disease in Brandywine, which occurred under the observation of Dr. Miller. There were several cases of disease in Wilmington resembling the above in some of their features, but as their character was doubtful, no further notice will be taken of them, the purpose of this communication being, perhaps, fully answered by the foregoing.

The following is an analysis of the prominent symptoms of the above 12 cases. In 8 the attack was sudden; 10 had headache, in 4 frontal and violent; 10 constipation; 5 yellow skin, 2 dusky; 9 had vomiting, 4 nausea alone; 7 hot skin; 5 marked pain in the back; 3 sore throat; 9 tenderness of epigastrium; 5 decided thirst; 7 restlessness; 3 hiccough; 3 light-coloured stools at some period; 2 epistaxis; 2 blood from mouth; 6 dark flaky vomiting; 7 delirium; 4 injected eyes; 5 urine retained or tardily passed; 3 pain and soreness of the legs; 5 of the fatal cases had a marked abatement of the first train of symptoms, on or about the third day. The highest rate of pulse in the early stage was 124 per minute; the lowest at any stage was 80.

The tongue in two cases was red; in eight was moist for three days, of light red colour, slight coat; and dry tongue in the progress of the disease was rare.<sup>1</sup>

Dr. Rush mentions several symptoms as of frequent occurrence in the fever of 1793, which were not found in the above; viz. a burning pain in the sto-

<sup>1</sup> Four of the cases had numerous spots on the face, arms, chest, and legs, resembling mosquito bites, which did not disappear on pressure, and were of a brighter colour than petechia. Mosquitos were so abundant here during the period when this fever existed, that I was not willing to report these spots as symptomatic of disease, although I believed them to be so.

nach, profuse discharges of bile from the stomach and bowels, dilatation of the pupils, and an intermittent pulse.

As to the treatment pursued in these cases, it may be said in a few words, that in the commencement it was such as is usually pursued in fevers of a similar aspect; while towards the close of the first, or the invasion of the second stage, quinia in moderate doses, sugar of lead, and lemon-juice, with broths and stimulants, either wine, ammonia, capsicum, or creasote, and in the last case, mur. tinct. of iron, were prescribed. Dr. Askew states that from the time of the administration of this last medicine, the brown vomiting in that case ceased.

The dates of the occurrence of nine cases were respectively as follows: July 27, 4 o'clock P. M.; Aug. 4, 3 P. M.; 10th, 3 P. M.; 11th, 6 A. M.; 13th, 12 A. M.; 27th, 2 A. M.; 30th, 10 A. M.; Sept. 7, 5 P. M.; 10th, 4 A. M.

The duration of the disease from development to death in these cases, was respectively as follows: 3 days, 12 hours; 5 days, 5 hours; 7 days, 18 hours; 2 days, 7 hours; 2 days, 17 hours; 3 days, 19 hours; 4 days, 16 hours; 5 days, 15 hours; and 3 days, 7 hours.

In endeavouring to fix the nosology of this disease, the above analysis, and the history of the cases, imperfect as this is known to be, will be left to produce their own impression; but the most striking characteristics of the disease will be reviewed, and from them some result deduced, which it is hoped will be just. It will be observed 1st, that the general similarity between the cases throughout, was as marked as that which usually obtains in the same number of violent cases of most diseases; next, that an evident subsidence of active symptoms took place in the fatal cases about the third day: a lull in the disease apparently occurring of a most delusive character, both to patient and physician; 3d, that the fatal aggravation which then took place, terminated in one or two of the cases with remarkable rapidity, and in all marched steadily onward through this latter stage; and last, that a hemorrhagic diathesis was rapidly developed in nearly all the fatal cases, as exhibited by epistaxis, the exudation of blood into the stomach, either retained, or subsequently expelled. These circumstances indicated the powerful and pervading influence of some poisonous principle of not less fatality than we see in cholera or scarlatina, and were sufficient to excite suspicion of the disease being yellow fever, at an early period of its existence, a suspicion which deepened into conviction day by day. At present, but one opinion prevails among the physicians of this vicinity, whatever may be the impression produced elsewhere by the examination of the above facts.

It is an interesting fact that at the time when these cases appeared, Brandywine and its vicinity were in as healthful a state as usually obtains during the summer months. In Wilmington, from the latter part of July or the 1st of August, intermittent fever prevailed to a greater extent than since the year 1846, but did not rise to a higher grade than the simple form, or occasionally

that of a mild remittent. A tendency to hemorrhage greater than ordinary had been observed among us, connected not only with dysenteric cases, but also with tubercular disease.

A period of six weeks occurred between July 27, the commencement of the first, and September 13, the termination of the last case, during which time the thermometrical mean was  $75^{\circ}$ ; and the mean from that period to the end of the month was  $67^{\circ}$ , a temperature  $4^{\circ}$  higher than the average of the last 60 years; yet the wonted uniformity of health returned to the village with the removal or recovery of the last case, and was not again interrupted.

The other point of importance connected with this disease is to ascertain, if possible, its origin.

The history of the vessel which Ezra B., the first case, assisted in bringing up to Brandywine village, has been mentioned. Previously to her lying up at the New Castle wharf, she had been engaged in the wood-trade, and had confined her trips to the Delaware and Susquehanna Rivers. As regards the state of the bilge-water in her hold, the common statement of the temporary crew is that it was perceptibly offensive. None of the other persons on board became sick, however, and none of the previous or subsequent crew, as far as can be ascertained, suffered any bad effects from this cause. It is difficult to refer to an exposure of a few hours in such an atmosphere so overwhelming a result in one case, while all the rest of the company were unaffected, as well as previous and subsequent crews. Indeed, it must be acknowledged that, excepting the general causes which were in operation upon the mass of the people of this vicinity, none can be found adequate to the production of the case; and that whatever value may be attached to the local agents hereafter to be mentioned, which were present in the other cases, they could have no bearing upon this.<sup>1</sup>

All the other cases, except the fifth, occurred about 400 yards from Case I., at the eastern extremity of the village, the principal part of it lying between, and none of them were in contact with this patient directly or indirectly.

Mr. H., Case II., was taken sick after having been engaged on that morning and the previous day in unlading a sloop at one of the mills, he being in the second story of the mill. He complained very much of the dust of the grain, and the heat of the day, but ate heartily at noon. The sloop belonged to B. W., and traded in the Delaware and Virginia Rivers, and had been no further south.

Case V. was an apprentice to Jon. Z., the ship-carpenter, and lived in his family. He began to complain after having been engaged on a hot day in repairing the hold of another Brandywine vessel, which also traded in the same rivers as the above, and which he stated contained very offensive bilge-

<sup>1</sup> A visit to Philadelphia was made by Ezra B. on July 4th, but he spent the day in the upper part of the city, and was not south of Chestnut Street, and consequently not in the infected district.

water. But no difficulty on that point had been experienced by the crew, and there had been none of them sick previously or subsequently; so that this cause does not appear sufficient to have originated his disease.<sup>1</sup>

The yards of the two families from which all the cases, excepting Cases I. and V. came, adjoined, and the houses were situated about 100 feet apart on the bluff above mentioned, and about 200 feet from the creek, the bank continuing boldly to the water's edge, and against it, the tide ebbs and flows. Between Mr. Z.'s house and the creek is his ship-yard, which has been established for half a century, and is consequently covered by a large quantity of wood-chips in various stages of decomposition, and their residuum.

The hot weather of June was followed by the rainy weather of July, during which 6.29 inches of water fell, while the mean heat of the month was 77.14 degrees, which was greater than the average for this neighbourhood by two degrees. August followed with its intense heat, the mean rate of the thermometer being 76.76°, or nearly 4° above the common average. The whole amount of rain for this month was 3.08 inches, which fell principally in the first half. The tendency of the combined action of heat and moisture in this yard was to produce a decomposition of the woody fibre lying just below the surface, and in some degree, of the timber, which lay about in considerable quantity and in various stages of seasoning, to the result of which all who were engaged in the yard were exposed during the day, but the neighbouring families only at night. This observation is greatly modified by the fact that the face of the yard had a considerable declivity, and could not continue wet except during rainy weather, though it might be damp beneath, the substratum of the soil being clay. No peculiar effluvium was recognized by the workmen or the family, although one of the sisters of Mrs. Z. who was in the house during her illness and afterwards, noticed on several evenings an unpleasant sickening odour, such as might have resulted from the timber and wood-chips lying about in such abundance, when wet. This exhalation was not perceptible at a dwelling lying east of, and about sixty yards from the centre of the ship-yard, and consequently in the direction of the prevailing winds, whose tenants would have been susceptible to it, if it had extended that distance, as they had removed but a few months previously from the upper country.

The yard of the dwelling of Case II. had been permitted to become very filthy from the deposit of a number of fowls, to which was added the effluvium from a duck puddle, a foul hog-pen, and two privies. The cellar also of his house, was in an unclean state.

During the summer months, the wind blew from the west, for the whole or a part of seventy-two days, and fifty-nine from the south, and consequently directed whatever exhalations originated in the ship-yard, and the other pre-

<sup>1</sup> This vessel had just arrived from Virginia with a load of wheat, having been a month on the trip.

mises, just mentioned, towards several houses lying northwardly and eastwardly, and near at hand, especially upon that occupied by Mr. Z.

In one of the houses lying near that of Mr. Z., a fatal case of disease, complicated with abortion, occurred, after the removal of the family of Mr. Z. from the neighbourhood. No account sufficiently satisfactory has been obtained to warrant a positive opinion as to its nature; though enough to lead to the belief that it was the same as the others. No other person was sick in any other of the neighbouring dwellings.

In Jon. Z.'s family eight were attacked, of whom five died. He left the house September 12, with two little girls and a son, he and the boy being convalescent from their attack. The female children were slightly sick afterwards.

It may be remarked that none of the physicians in attendance upon these cases, none of the members of the families in which Cases I. and IV. occurred, or of the families in Wilmington into which Jon. Z. and children, and Case XII. removed, were affected by the disease.

Two of the cases, first and fifth, had been exposed directly to the effluvium of bilge-water, but case second had no such exposure, and was subjected only to the causes of disease which have been mentioned, as existing beneath and around his dwelling. To the other cases which originated in these two families, the advocates of contagion will find abundant room for the application of their doctrine, while they will find themselves at fault in the absence of infection from the families in which Cases I. and V. occurred, and also from those exposed in Wilmington, as above stated.

I will only remark further, that whatever doubts may have been thrown around the history of the outbreaks of yellow fever in other places, and consequently upon the conclusions to be deduced from them, if we allow the Brandywine fever to have been yellow fever, we must unquestionably concede, in this instance, a home origin, and that a tropical climate had nothing whatever to do with furnishing the materials of it. In the extraordinary heat of the season, its primary action upon the physical energies of man, and its secondary operation through the decomposition of animal and vegetable substances, assisted by an epidemic influence which seemed to prevail extensively in our country, either dependent upon the above agencies, or merely coexistent with them, appear to be the origin of this fever among us; and, if this be true, it is not necessary to refer its extension in any case to contagion, for whatever caused it in one instance was, of course, competent to continue it. Why it fell upon the open banks of the Brandywine, and passed many places in Wilmington apparently as well, or better prepared for its reception, is a question which in the present state of our knowledge of pestilential diseases, does not admit of a satisfactory solution.

*Note.*—The following extract from the meteorological reports of the *Medical News*, recorded in Philadelphia, and from which I have taken all my

statements of the weather, will be interesting in this connection. "In looking over our records, we find that the mean temperature of the three summer months was 76.77-100 degrees; which is about 4 degrees above the mean summer heat of Philadelphia, as deduced from observations for the last sixty-four years. This temperature has been exceeded but five times within that period, and then by less than one degree. Thus, in the years 1793 and 1798, when yellow fever prevailed in Philadelphia, and in 1822, the average summer heat was 77 degrees, and in 1828 and 1838 it rose to 77½ degrees."

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ART. III.—*Extracts from the Records of the Boston Society for Medical Improvement.* By WM. W. MORLAND, M. D., Secretary.

*November 14. Excision of Head of Femur.* DR. PARKMAN.—A boy aged 12 years entered the Hospital May 9, presenting the usual symptoms of hip disease of the right side, in a somewhat advanced form, and which was said to have existed six months; its probable existence was, however, longer. During the summer, the symptoms became more and more aggravated, and large abscesses opened in the groin, on the inside of thigh, and on the nates; and the limb was very much retracted by the distortion of the pelvis, from the patient's necessary position on the left side, and the impossibility of employing extension, or similar means. Hectic symptoms also supervened, and at two periods he seemed likely to be carried off by a profuse diarrhoea. Under these circumstances, it was decided to lay open the abscess on the nates, which had now dissected the skin from below the trochanter, almost to the crest of the ilium, and to make an examination of the condition of the joint, with a view of removing the head of the femur, if such a course should appear indicated. For this purpose, on October 19, the patient being thoroughly etherized, the abscess over the joint was freely laid open, and the skin, gaping, disclosed a granulating surface of six inches square. The head of the bone was in the socket, but on rotation of the limb, the crepitus which was felt clearly indicated extensive caries. An opening was therefore made through the upper part of the capsular ligament, and, the round ligament having been already destroyed by the disease, the head of the bone was turned from the socket and removed, at the middle of the neck, by a strong pair of cutting forceps. The acetabulum was felt to be carious in about one-quarter of its extent, but of course nothing was done to this. Since the operation, the patient's progress has been most satisfactory. The large granulating surface has been slowly contracting; the limb is drawn down by weights, and the constitutional symptoms have entirely disappeared. There is good appetite, no diarrhoea, a marked increase of flesh, and every prospect of a favourable termination.

The specimen exhibited to the Society, showed the removal of the entire cartilage from the articulating surface, with a necrosis and commencing line of separation of all the denuded parts. It was clear that the result of such a case, if left to nature, and provided the powers of the patient had held out, of which there was little probability, would have been a large sequestrum in



the cavity of the joint, and any attempts on the part of nature, to discharge this by ulceration, would in all probability have proved abortive.

Jan. 27. The patient continues to make very satisfactory progress, and there are no constitutional symptoms.

*Lithotriety.*—Dr. J. MASON WARREN showed the fragments of an oxalate of lime calculus, removed by the crushing operation. The patient was 30 years old, and had the first symptoms of the disease 10 years since. He had previously, after a nephritic attack, passed a small calculus from the urethra. His symptoms at the time of the operation were great pain, a frequent desire to pass water, bloody urine, and inability to bear the jolting of any vehicle. The water was passed every half hour, both day and night. The measure of the calculus, when first seized by the lithotrite, was fourteen lines in diameter. It was easily crushed, with scarcely any pain to the patient; fragments passed off without difficulty in the course of twenty-four hours. The operation was repeated three times in a fortnight, without the use of ether, giving scarcely any more uneasiness than an ordinary case of catheterism, and the patient discharged in about three weeks perfectly relieved. Dr. W. stated another case that had been operated on in the spring, the patient having for fourteen years endured the most excruciating suffering, being unable to get into bed without assistance, from the pain produced by the motions of the calculus. The stone, which was a large one, was destroyed in about six operations, and, notwithstanding the long time the bladder had been submitted to this severe irritation, it seemed at once to acquire its natural tone, on the removal of the irritating cause. Dr. W. said that for the last ten or twelve years he had treated, on an average, three cases of stone in two years, by the lithotritic operation, the patients being from ten years of age up to seventy, one or two of the elder patients having the prostate in a greatly enlarged state. Still, he had not had an unfavourable result, and in no case was the operation, once commenced, abandoned as impracticable. In the cases of enlarged prostate, the stone had usually been found lodged in a *cul-de-sac* behind the prostate, and it has been found necessary to dislodge it by means of the beak of the lithotrite turned backwards, and the stone pushed into the bladder before it could be seized and crushed. In one of these cases, considerable difficulty was experienced from the fragments getting back into the sac and being retained there, and acting as nuclei for fresh concretions, requiring very frequent operations before they could all be removed.

Dr. W. also exhibited a very large calculus, removed from the body of a gentleman after death, which had been lodged in the way above stated, behind the prostate. He had suffered with it for many years, and finally it was the cause of his death. He had been sounded by a number of distinguished surgeons at a distance, and by some, declared to have a stone, by others not. From this reason he had deferred for many years submitting to any operation. Dr. W. sounded him in the way above stated, and detected a stone. An operation was in this case thought inexpedient, on account of the great disease existing in the whole urinary apparatus. After death the kidneys were found extensively ulcerated, the ureters enlarged, and the bladder greatly thickened and sacculated, with a cavity or depression behind the enlarged prostate, in which the calculus was lodged and partially concealed.

*Scrofulous Disease of the Knee-Joint.*—The specimen was shown by Dr. S. D. TOWNSEND, who had removed it from a scrofulous girl, 14 years old, who is affected with phthisis, but, of late, has been improving somewhat and

has gained flesh, although having a cavity in the summit of the left lung. The amputation was requested, for the relief of constant pain in the limb. The patient was confined to her bed for a year, by reason of the diseased knee alone, and unable to be moved, except under the influence of ether. Patient died suddenly six weeks after the operation, of hemorrhage from the lungs.

At the next subsequent meeting (Nov. 28), Dr. J. B. S. JACKSON said that, on making a transverse incision into the cancellated structure of the bones removed, no tubercle was discovered. Dr. J. added, that once only, and that in disease of the vertebrae, had he seen tubercle in bone; in an external joint, never; he thinks the disease, in the present instance, may have originated in the synovial membrane; at first, there may have been acute synovitis.

[In the London *Lancet* for November, 1853, Mr. SOLLY remarks: "I do not think, with some surgeons, that the removal of a scrofulous joint increases the tendency to tuberculous disease of the lungs." He also adds, unless there be positive evidence of disease of the lungs, he would not think it right to deprive such a patient of relief by removal of the affected joint. Moreover, he states that in two cases he has amputated *scrofulous knee-joints* where there were some symptoms of tubercular deposit in the lungs, but, in both cases, the patients recovered from the operation, regained their health, and, he believes they are now alive, six years having elapsed.—SECRETARY.]

*Injuries by a Fall; Compound Dislocation of Left Ankle; Fracture at the Base of the Brain, &c.* Dr. CABOT.—Daniel O'D., æt. 33 years, rigger, on Nov. 8, 1853, fell twenty-four feet, striking on his feet, and was said by bystanders to have rebounded to the height of three or four feet, and then to have fallen backwards, striking the back of his head. One hour and a half afterwards he was brought to the Hospital; pulse 72; rational; answers coherent.

Dr. C. saw him two hours after the accident, about one o'clock P. M. At that time he began to ramble, answering at random, when roused, and dosing in the intervals. When examination of the injuries about the ankle was made, he complained of the pain, and gave some evidences of rationality. There was a compound dislocation of left ankle; the foot in front of the astragalus being turned downwards and inwards, the surface of the astragalus articulating with the navicularis protruding through an extensive laceration of the soft parts, below and a little in front of external malleolus, the astragalus being separated from its articulations with the bones of the ankle, and with the os calcis, though still retaining its relations as regards position with the tibia and fibula. He was etherized (without the occurrence of any peculiar symptom), and the dislocation reduced; the edges of the wound brought together, and the limb secured in a fracture-box. After getting him to bed, he expectorated a small quantity of bloody mucus. On examination of his head, could get no grating, nor was there other evidence of fracture about the vault of the cranium, upper jaw, or face, except some puffiness of scalp, about the back of head. Pulse about 60; tolerably full and strong. Some appearance of delirium; possibly owing to ether. Pupils very greatly contracted.

He became more and more sleepy, and the difficulty of rousing him increased. Dr. C. saw him again, at about six o'clock the same evening, and found him more comatose, though he could be imperfectly roused by loud shouting. Pupils not so much contracted, somewhat oscillating; puffiness of scalp much increased; pulse 128, thready; respiration, 36. Face very pale; no oozing of blood or serum had at any time taken place from either ear.

Coma became more and more complete; the pupils were dilated, &c., and he died at eleven o'clock P. M., thirteen hours after injury.

*Post-mortem examination*, eleven and a half hours after death. Astragalus found to be dislocated from the bones of the foot, but still retaining its position between the malleoli; a small piece broken off on its outer inferior edge.

Os calcis denuded of cartilage and much bruised, over a small surface nearly corresponding to the injury of the astragalus; the soft parts extensively torn; anterior tibial artery entire; condition of posterior tibial artery not ascertained, owing to haste in making the examination, and desire to avoid unnecessary defacement of body.

*Head*; blood was found effused between the scalp and pericranium, over the whole back of the head, from the neck almost to coronal suture.

On removing the calvarium, there was found extensive laceration of both anterior lobes (they being rather *mashed up*, than lacerated, as the expression is ordinarily understood), on their inferior surfaces, to the extent on each side of about one and a half inches, and one-third of an inch in depth; considerable blood being effused about the injury. The inferior surface of the left middle lobe and the posterior extremity of the left hemisphere were each lacerated to the extent of about an inch, and to the depth of about half an inch; the cerebral substance about the lacerations in some parts had a soft gelatiniform appearance, as it has about an apoplectic effusion, and there was perhaps a slight trace of yellowish discoloration.

The petrous portion of the left temporal bone was broken through, the fracture extending for some distance along the lateral sinus, but not lacerating it; meatus auditorius not involved. Continuous with the fracture, there was an extensive separation of the lambdoidal suture. There was some effusion of blood into the temporal bones.

*Fibrous Tumour of the Uterus; exploratory Gastrotomy.*—Dr. J. B. S. JACKSON showed the specimen, sent to him, with a history of the case, by Dr. CUTTER, of Woburn. The whole mass weighs 3½ lbs. The cervix and fundus uteri were involved by a large tumour, from which several smaller ones projected into the cavity of the abdomen. The diagram on page 622, Vol. VI. of the *American Med. Association's Transactions*, represents a similar case. The structure of these tumours was lax and coarse, and the bloodvessels in them largely developed. To a portion of the external surface of one of them a piece of omentum was attached by old adhesions.

The patient was an unmarried female, 33 years of age, and first noticed the tumour about seven years ago. Two years afterwards, she consulted a physician, and it was then very perceptible in the left hypogastric region. Its development was attended with several attacks of peritonitis, and for two or three years with dysuria, so that she was obliged to have recourse to the catheter. Catamenia regular, but attended of late with some hemorrhage. General health has decidedly failed since Feb. 1853; patient, however, continued to be employed as a nurse until midsummer, when she had a more severe attack of soreness over the abdomen, which was followed by ascites, and for which, she was twice tapped. She was seen several times by Prof. CHANNING and other physicians, and her case seemed hopeless. She had seen some accounts of recent operations in somewhat similar cases, and resolutely determined not to die without an operation that proffered the only hope of relief. Oct. 12th, in presence of Drs. CHANNING and PARKMAN of Boston, SANBORN of Lowell, and CUTTER, Dr. G. KIMBALL, of Lowell, made an incision in the median line, nine inches in length, and fully exposed the tumour. Its true character was plainly seen, and its connections forbade removal. A small projecting portion being cut into, bled so freely as to require a liga-

ture. The wound was then closed up, and the patient suffered very little for the first week, having been kept fully under the influence of large doses of opium. She died twelve days after the operation. Very few peritoneal adhesions were found on dissection; most of the wound in the integuments was united, and the cut in the tumour entirely healed. In addition, it should be further stated, that *always* on examination per vaginam, the tumour could be felt low in the pelvis; and previous to the operation, Simpson's sound readily penetrated five inches within the os uteri.

*November 28. Encysted Tumour of the Breast.*—Dr. DURKEE exhibited the specimen. The following account was furnished by Dr. B. S. SHAW, who sent the specimen to the Society:—

This tumour was removed by Dr. HITCHCOCK, of Fitchburg, November 26, from a maiden lady, æt. 70. It was of four years' standing, and had increased rapidly in size during the last six months. No pain nor tenderness had been occasioned by it. It was easily and perfectly separated from the breast. Walls of cyst at first seemed thin, but firm, allowing fluctuation; on further examination, they were found to possess considerable thickness. Contents, a gelatinous mass (as seen in the section made this P.M.) of different colours, light red, dark red, green, and also, in spots, black and white. Contains no cancer cells, no pus cells, and no well-marked microscopic structures except blood-globules, recent and altered fatty matter, and cholesterin.

*Entire want of the Lactal Secretion.* Dr. STORER.—Six weeks since, a lady 21 years of age, whose health had been uniformly good for years, was confined with her first child. The breasts secreted no milk, although suction by the mouth had been continued three times daily by some member of her family until within a few days.

Dr. ABBOT mentioned a case of non-secretion of milk for six weeks; it then appeared; the tardy action, Dr. A. thought, was owing to excessive prostration of the patient; the child was stillborn.

Dr. MINOT referred to a case of want of secretion. No efforts were made to excite the glands to action, but rather the reverse, by reason of peculiar circumstances rendering their quiescence desirable. Sulphate of magnesia was administered.

Dr. STORER spoke of a case of weaning the child at nine months by reason of a freak of the mother; the milk disappeared, but returned on reapplication of the child to the breast.

Dr. PUTNAM referred to a case of non-secretion. He considered it constitutional.

Dr. PARKMAN said that the leaves of the castor-oil plant, made into a warm stupe, and applied to the breasts, had been vaunted lately in foreign journals as possessed of almost marvellous efficacy in the production of the lactal secretion.

*Delivery without any Sanguineous Discharge.*—Dr. W. E. TOWNSEND reported that, on the night of October 22, he attended Mrs. C., a stout, well-made woman, about 25 years old, in her second confinement; and that she had an easy delivery after five hours from the commencement of her pains. The child was of good size and in good condition, but its birth was unaccompanied by any sanguineous discharge, nor did one drop of blood follow the placenta.

The nurse, in the morning, stated that when she changed the patient's clothes,

she did not discover any stain of blood. No flow took place till after twelve hours, and the application of warm fomentations to the abdomen. It was then scanty, and, after continuing in a slight degree for a day or two, ceased.

For the first week after delivery, the milk was very abundant and of good quality; it then became thick and stringy, then bloody, and at the end of a fortnight stopped altogether.

Mrs. C. stated that the same changes occurred in her milk after her first confinement, and that the loss of blood upon and after that delivery was unnaturally small.

Both children are now alive and in good health.

*Violent Hemorrhage during Gestation, with Pain, &c.; Child carried to full term, and safely born.*—Dr. PARKS reported the case.

The patient was small and of spare habit; the flow of blood came on suddenly, at the end of the sixth month, after unwonted exertion, and was not repeated. Digital examination of the cervix uteri afforded no evidence of ulceration. The blood lost saturated a sheet. The patient was safely delivered three weeks since. Perfect rest and the usual caution in like cases, for several weeks, were successful in obtaining this desirable result. Dr. P. believed that there was no ulceration of the os uteri, and remarked that, "although, as Mr. Whitehead has clearly shown, hemorrhage may occur in connection with ulceration, and pregnancy nevertheless be uninterrupted thereby (particularly if the inflammatory affection be topically treated), he believed it quite unusual to find the progress of gestation continue to term, when large gushes of blood occurred independently of a morbid condition of the os and cervix uteri."

Dr. H. G. CLARK said he had had, in former years, in dispensary practice, patients who flowed, during gestation, until they were blanched, yet went their full term, and did well.

[The class of patients in whom such accidents occur, must, of course, have some influence upon the result. The power of endurance nearly always manifested in all stages of the pregnant and parturient condition by the labouring classes, and particularly by the Irish, is certainly very remarkable. In no point is it more noticeable than in the amount of labour and exertion undergone by them when pregnant, and in the rapidity of rising from child-bed. In the last matter, the only difficulty being to keep them recumbent sufficiently long to gain security against after accidents, to be feared from too early movement.—SECRETARY.]

*Frottement over an Abdominal Tumour.*—Dr. J. B. S. JACKSON reported the case, which he had lately seen. The patient was an elderly woman, and had, apparently, ovarian dropsy complicated with ascites. The tumour seemed to consist of at least four sacs of large and nearly equal size. One of these, situated towards the epigastrium, was more tense than the rest, and tender upon pressure, as if from inflammation of its inner surface, which seems to occur so frequently in these cases. Upon pressure over this cyst, a sensation of friction was perceived, which was strongly marked, and resembled perfectly the creaking of new leather. Dr. J. remarked that there may have been peritonitis over the cyst, and not an inflammation of the interior as he supposed; the surface then would have been roughened and the phenomenon readily explained. The signs were all limited, however, to this one cyst. The patient was in a very comfortable state, and did not appear at all like one suffering from peritonitis; and, further, this last form of inflammation is rare

in ovarian disease as compared with that which was supposed to exist in this case. Dr. J. referred to two other cases that he had reported to the Society (*Am. Journ. of Med. Sci.* July, 1850), in both of which there was ascites, and in neither of them any degree of peritonitis.

*Typhoid Fever, with Abscess in the Lungs and Subcutaneous Cellular Tissue.*—Dr. PUTNAM reported the case of a young man of robust constitution, in whom, during the third week of fever, small knots or indurations were felt below the skin. They soon lost their definite form, softened down, and some of them disappeared; others went on to suppuration. This process was quite short, in some instances being completed in twenty-four hours. The patient's attention was generally directed to them by some degree of pain, but sometimes they were accidentally discovered. The skin in most cases was not inflamed or reddened, even when the pus had reached the surface. They appeared in irregular succession, and were of various sizes, from one to four or six inches in diameter. The whole number was twenty-four, found in various parts of the trunk and limbs, one of them completely surrounding, and causing great distension of, the left knee-joint. Some of them were opened, and pressure applied, when there appeared a tendency to burrow into the cellular membrane. No one of the glands was affected. During the sixth week a large quantity of pus was discharged from the lungs. He ultimately recovered.

Another case of purulent deposit, after typhoid fever, occurred three years since, in which the patient was nearly choked by the sudden and profuse discharge of pus from the lungs. The skin became cold and livid, and he was for several hours considered moribund. Two or three times a week, for the space of a month, the paroxysms of cough returned with copious expectoration of fetid pus. His recovery was perfect.

Dr. Putnam stated further that there were three cases in the Hospital at the present time, and one other had occurred in a neighbouring city. In neither of these was there abscess in the lung; but they all should be referred to the class of cases very appropriately termed, by Dr. Jenner, pyogenic fever. These were the only cases that had come to his knowledge, and he considered it a very infrequent complication of typhoid fever in this vicinity.

*Single Congenital Cataract.*—Dr. BETHUNE reported the following cases: Emily H., 15 years of age, applied at the Infirmary with cataract of the left eye only. A lady who came with her, was present at her birth—which was without accident—and described the appearance of the eye as much the same as at present. Dr. B. remarked that he had very rarely seen this disease confined to one eye.

*Singular Malformation of Iris.*—Nov. 14, Dr. B. was called in consultation to see a gentleman with mydriasis of the left eye. The attack was sudden; the pupil dilated and fixed, and the case presented nothing remarkable, with the exception of a peculiar appearance of the iris, to which attention was drawn by the surgeon in attendance. A segment of the pupillary circle at the inner margin was cut off by a fine light thread running from below upward. From this thread, fixed by its two extremities to the edge of the iris, two little branches proceeded, also attached at the other extremity to the edge of the iris. The main line, if it may so be called, at first meeting the iris at its upper attachment, seemed imperfectly joined, but soon melted into the margin of the pupil. The patient was not aware of having met with any previous accident to the eye, or of any disease to account for such an appear-

ance; and it was agreed by the attending surgeon, whose experience in disease of the eye had been very large, that it could have no connection with the present attack, and was therefore probably congenital. In the usual state of the pupil, it probably would have escaped notice, lying relaxed on the surface of the iris. Indeed, it could hardly be distinctly made out without a magnifying glass. On close examination, however, Dr. B. could not resist the impression that it was a portion of the iris itself, detached by a blow of some kind; and this impression was confirmed by examination of the iris, which, in the limits embraced by the attachments of the thread, was seen with its edge slightly thickened, and less sharply defined than it appeared elsewhere. How such an accident should have occurred, *in utero*, it is difficult to conceive. The accompanying figure is an imperfect representation from an outline made on the spot. These threads were nearly as fine as a cobweb.



*Severe Injury to Head.*—Dr. CABOT reported this case. The patient, J. D., an Irish labourer, on Saturday, November 19, had his head bruised between a railway engine and tender, while engaged in “shackling” them together. The engineer and some of the bystanders heard a loud “crunching” sound at the time. The accident occurred at East Boston. Some hemorrhage took place at the time from the nose, mouth, and from both ears. On admission into the Massachusetts General Hospital, November 23, he complained of pain in the head—not, by his own account, existent previous to the accident. He has had slight bleedings from the right ear every day since the accident; pupils of eyes natural. Ordered light, farinaceous diet; cold compresses to head, &c.; he had taken a dose of calomel and jalap, which had salivated him.

*Nov. 25.* Remains about the same; paralysis of facial nerves on both sides. Apply four leeches to each temple; continue compresses wet with cold water.

*26th.* Much relieved by leeching and cold applications; bowels loose; pulse 72, feeble.

*28th.* Nearly the same; pulse 64, feeble.

*30th.* Less rolling of the eyeballs upwards than at first; no dejection for two days. R. Solutionis magnesiae sulphatis, infusi sennae comp. aa ʒij.

*Dec. 1.* More comfortable; two operations from medicine; no hemorrhage from the ears since entrance.

*4th.* Galvanism was tried yesterday, the current being directed to the sides of the face, along the track of the seventh pair of nerves; face paralysed; cannot close eyelids.

*5th.* Mouth quite sore; some bleeding from the gums; his food gets between the gums and the cheeks and annoys him. A gargle of the following form was used: R. Acidi tannici gr. x; aquae rosae ʒj. M. No alvine dejection for three days; enema to be given; bread and tea for food.

*7th.* Apply, front of each ear, ceratum cantharidis, 1 to 1½ inches; may take broth.

*12th.* Remains comfortable.

Discharged, feeling well; but the paralysis of the facial nerve remains.

*Dec. 12. Case of Poisoning by Aconite*, reported by Dr. PERRY.—Dr. P. was called, Nov. 18, at 11 o'clock P. M., to see Mrs. E., 84 years of age, who was taken suddenly ill after having swallowed some quack medicine for the cure of a slight neuralgic or rheumatic affection. In a few minutes

after taking the medicine she was attacked with distress at the stomach, which was soon followed by vomiting, dryness of the throat, with a burning sensation which extended to the stomach, with prickling of the whole surface of the body, and a confused feeling in the head. When Dr. P. arrived, which was in about half an hour after the attack, the following symptoms were present: distress at stomach, retching, and occasionally vomiting, cold extremities, pulse small—140, pupils contracted, countenance anxious, surface of the body covered with a cold sweat; great uneasiness, patient tossing from one side of the bed to the other. It was impossible for her to retain anything on the stomach; and such was her restlessness that it was difficult to apply external heat. In a short time she began to have convulsions, the upper extremities being more affected than the lower. These continued for about half an hour, when, after having a most violent one, which it was thought would terminate in death, she sank into a comatose state. Her breathing was stertorous, pupils dilated, and would not contract under a strong light; pulse full—40 in a minute, with entire loss of consciousness. She remained in this state for about five hours, when her extremities began to grow warm, the pulse quickened, and there was some evidence of returning sensibility. In the course of the forenoon, on the day following the attack, her consciousness returned, and from that time she had no uncomfortable symptoms. She was quite deaf before this, and she thinks her hearing has been much improved. All the symptoms in this case were so like the effects of some vegetable poison, that Dr. P. had the medicine analyzed, but no poisonous substance could be detected in it. It was afterwards ascertained that she had taken some of the *strong tincture of aconite*, which had been recommended to her as an external application over the seat of her neuralgic pain. Dr. C. ELLIS was kind enough to remain with this patient for some hours, and Dr. SHAW analyzed the medicine.

Dr. Perry said that this case differs from most of those which he had found recorded, in this respect—that the patient had coma. The mental faculties are usually not much disordered, and consciousness remains until a few moments before death. The convulsions too were stronger in this instance than usual. They are described by most writers as spasmodic movements rather than convulsions; and sometimes even such movements do not occur.

*Factitious Bezoar.*—Some years ago this specimen was brought from Switzerland by the late Dr. AMOS BINNEY, and it was subsequently given to a member of this Society. It was said to have been taken or discharged from the intestines of a goat, and was of a dark brown colour, smooth upon the surface, and about the size and form of a large nutmeg. Recently, it has been analyzed by Dr. BACON, and the following is an extract from his report:—“Three grains of the bezoar, thoroughly dried, were used for a partial quantitative analysis, and this gave 55 per cent. of organic matter, including organic salts of potash, lime, and magnesia, with traces of sulphates and phosphates; 40 per cent. of iron, and 5 per cent. of siliceous sand. Of the iron, 33 per cent. is in the metallic state, and the remainder in combination with organic matter, forming a soluble salt. The particles of iron are evidently iron filings.”

*Croup treated by Nitrate of Silver, &c.*—Dr. HOMANS reported two cases of true croup, treated mainly by the above application. In evening of November 23, 1853, was called to see a boy 3½ years of age, who, after being hoarse for a day or two, had become suddenly worse. Found his skin somewhat hot, respiration rather laboured, dry cough, with the harsh peculiar



sound belonging to croup; pulse accelerated, and hard. Ordered an emetic of ipecac. and calomel, and cloths, wet in hot water, to be applied about the throat.

24th. Was called early in morning; patient had passed a restless night; symptoms were all aggravated. On examining throat, found tonsils covered with lymph; examination of chest discovered nothing abnormal in that cavity. Introduced into larynx a sponge charged with nitrate of silver in solution, 40 grs. to the ounce of water; ordered 1 gr. of Dover's powder to be given every four hours, with  $\frac{1}{2}$  gr. of calomel, to be discontinued after the bowels should have been opened, and one grain of Dover's powder to be given instead; also ordered water, in which mullein was steeping, to be evaporated in two vessels in the chamber, and at intervals to be placed in such a situation that the patient might inhale the vapour. In evening, respiration seemed less laboured, and patient looked more comfortable.

25th. Bowels open in night; patient was quite easy in evening, but had a very restless night. Respiration at present, perhaps, more laboured than at any time since commencement of attack; other symptoms as yesterday. Sponge again introduced into larynx, and on its withdrawal several shreds of lymph were observed upon it. Patient complained of some soreness in throat after this, which in a short time subsided. Continued in much the same state during the day, articulating only in a whisper; cough for the most part dry and harsh, though with some slight efforts at expectoration.

26th. Has passed a better night; slept, perhaps three hours in all, and when awake, less restless; respiration, however, quite laboured at times. Nitrate of silver again introduced into larynx in same manner as before, after which he coughed violently, and raised quite a large portion of membrane. Through the day, cough was less harsh; at times loose, with some expectoration. In evening, more comfortable in every respect; has taken only  $\frac{1}{2}$  gr. of Dover's powder every four hours.

27th. Had a much better night; slept more, coughed oftener, and raised more easily shreds of lymph and thick mucus. The air in the chamber had been constantly rendered moist with the vapour of water as at first directed. From this time, improvement gradually advanced, and on the 30th inst., a week from the commencement of the attack, he began to use his voice, though not always able to do so. He is now in good health.

It may be remarked, that two children of this family had been victims to croup a few years since, one 20 months old, in thirty-six hours from first moment of attack; the other, 5 years old, after an illness of four days.

CASE II. December 6, 1853.—Was called to see a lad, 6 $\frac{1}{2}$  years old, residing in Milton, in consultation with Dr. C. C. HOLMES. The boy had had a slight eruption resembling scarlatina a fortnight previous, which did not, however, prevent him from attending school. For the last two days his appetite has been small, and for twenty-four hours past he has been exceedingly restless, hot, complaining of his throat, one side of which was swollen externally. In the night, his respiration became so difficult, that Dr. Holmes was summoned, who administered an emetic, and made external applications to the throat; after this, for a time, he was more easy, but two or three hours having elapsed, dyspnœa greatly increased, the symptoms becoming so alarming as to induce Dr. H. to state his apprehensions to the parents, and to request a consultation. At noon, I saw him; his countenance was livid, his respiration laborious, accompanied with motion of the head at every inspiration, his voice a whisper, extremities cool, and his appearance indicated a speedy and fatal termination. In consultation, it was agreed to inject into

the larynx a teaspoonful of a solution of nitrate of silver, grs. xl. to ʒj. of water; and to repeat this in the evening, should the bad symptoms continue, giving also 1 grain of Dover's powder once in three or four hours, as might be needed to quiet him. The operation was done with a gold syringe, having a long curved beak, it being the first time I had seen it performed. I therefore had some solicitude as to the effect of injecting a liquid of this character into the respiratory passages, so sensitive to the accidental admission of even a drop of water in ordinary circumstances. The operation was easily done, but the dyspnœa was for a moment distressing—soon, however, subsiding—after which the child, with much relief, expectorated a considerable quantity of thick tenacious mucus, with perhaps some shreddy lymph. By evening, symptoms were so much abated as to render a second injection unnecessary. From this time, respiration and voice gradually returned to their normal condition, with occasional attacks of dyspnœa and free expectoration, until health was slowly restored.

At the meeting of the Society, February 13, 1854, Dr. HOMANS reported another case, which was treated in a similar manner; the disease was complicated with scarlatina.

CASE III. *January 8, 1854.*—A young girl, 9 years old, who the day before had complained of chills, headache, and sore throat, awoke her attendant in the night by a loud, harsh cough; this recurred at intervals, accompanied by dyspnœa, until morning, when Dr. H. was called. She had been unable to speak loud yesterday, and was thought merely to have a cold, for which the usual remedies, such as bathing the feet in hot water, &c. were used on going to bed. Now, speaks only in a whisper—is very restless; feels sleepy, but cannot sleep; pulse 90; skin rather hotter than natural; respiration laboured, attended with a whistling noise, audible all over the room; complains of sore throat, and is thirsty. On examination, there was found ulceration on tonsils, with lymph. A sponge was then introduced into the larynx, charged with a solution of nitrate of silver, grs. lx. to ʒj. of water. Dover's powder, grs. ij, was given, with directions to repeat in four hours if restlessness continued; the air in the chamber was made moist, as in Case I., and the temperature kept as near 70° as possible.

9th. Some relief was experienced after application of yesterday, but at night all the bad symptoms returned, and continue at present; a slight eruption of scarlatina is now to be seen on the face and body; pulse 130, skin hot; thirst, headache. Dover's powder was directed in doses of gr. i, instead of ij, as yesterday. The sponge was again introduced into the larynx, and in the course of the day and night, some shreds of lymph were thrown up. The relief, after this application, was greater than after that of yesterday.

10th. Night more quiet, respiration less laboured; some disposition to cough and expectoration. Sponge not again introduced.

11th. A tolerably good night; symptoms of croup diminishing; scarlet eruption fully developed, covering the head, body, and extremities; is as yet unable to articulate aloud; expectorates with some effort.

12th. Improving; from this time the symptoms of croup ceased to be alarming. The scarlatina proceeded in its course, and she is now convalescent, Jan. 31, 1854.

Dr. H. remarked, in addition, that his ideas of the proper treatment of croup had been greatly modified of late; he is opposed to the often over-violent medicinal action by emetics, &c. used in such cases, irrespective, too frequently, of the condition of the child, and of its natural constitutional force; nature is, by these means, in very many instances disabled, and cannot

throw off the disease by reason of *induced debility*, added to the shock and depression caused by the attack; with this view, appropriate and efficient local measures, aided by a proper maintenance of the patient's strength, offer the most reasonable and likely chances of success.

Dr. STORER asked if the complication of scarlatina with the croup in Dr. Homans's case might not have had a favourably modifying action?

Dr. HOMANS thought it reasonable to suppose this so; he mentioned, incidentally, that there were six cases of scarlet fever in the family, of which the patient with croup was one.

*Disease about the Testicle.*—The specimen, with a history of the case, was sent by Dr. JAMES DEANE, of Greenfield, to Dr. B. S. SHAW, of Boston, and by Dr. S. to the Society:—

The organ is surrounded and closely invested by a thick, dense, fibro-cellular substance, such as is sometimes seen about the lung in cases of old pleurisy; the thickness varying from one-half of an inch to an inch or more. In the thickest part of this substance was a perfectly defined, rounded abscess, of the size of a large nutmeg, coated thickly upon the inner surface with recent lymph, and filled with viscid, greenish pus. The testicle itself was perfectly healthy in structure and of natural size, so far as appeared on a single incision through the mass.

The patient was a young man, twenty years of age, and was first seen by Dr. D. on the 12th of last October, when, he says in his note, "I judged his case to be simply hydrocele: I was informed, however, that the testicle was supposed to be diseased, and that the hydrocele was secondary, which was doubtless the fact. I withdrew about a pint of serum, and advised an attempt at a radical cure, and for this object adopted the iodine process, which failed. When the water was discharged, I was surprised to find the testicle in such a state of engorgement, and learned that it had been gradually increasing in size for two years, and that he had suffered greatly from pain, from a sense of weight, and from mental depression, so as to be disqualified from his usual pursuits. In fact, he, as well as his friends, was averse to the plan of radical cure, and wished for extirpation of the tumour.

"November 12, he came to me still anxious for extirpation, but I once more dissuaded him, and passed a seton through the cyst, which produced entire adhesion of its walls; still, the inflammation went on, and ended in slight suppuration, and on the 6th of December the testicle was removed."

In regard to the diagnosis in this case, Dr. D. says: "It appeared to me the disease was essentially some inflammatory condition of the testicle and its investments. I did not suppose there was any cancerous taint, but rather, that it was a strumous engorgement of the testicle, and that it would end in chronic suppuration and destruction of the gland. This opinion, it seems, was incorrect; and yet, under the circumstances of the case, I do not doubt the propriety of the course I adopted."

The subsidence of the enlargement of the testicle under the development about it of a thick fibro-cellular mass, was remarked upon, when the specimen was shown, as an interesting pathological fact, and as bearing upon the treatment of such engorgements by external pressure. The formation of such an abscess, and in such a structure also, is what no one would have anticipated; and it is not surprising that the case should have been regarded, to the last, as one of enlargement of the organ itself.

*Encysted Kidneys.*—The specimens were sent by Dr. E. LEIGH, of Towns-

end (who attended the dissection), and show the disease very finely. One of them is entire, and is much enlarged, measuring twelve inches in length, and weighing twenty-six ounces; it seems to be a complete transformation, and the cysts, as usual, vary in size and contain a thin fluid more or less colored. The other organ, which is about as large as the first, has been cut through longitudinally; and, besides the serous cysts, there are exposed several large cavities, which are nearly filled with a white substance of the consistence of soft putty, and much resembling the material found occasionally in the kidneys as well as in other parts, as the result of tubercular disease. This material, having been analyzed by Dr. JOHN BACON, Jr., is found to be wholly organic; containing pus-globules, epithelium-cells, much fatty matter, and, Dr. B. thinks, tubercular corpuscles. The ureter of this second kidney is obliterated near its origin.

The patient had been sick since last March, and he was thought to have had "liver complaint;" the kidneys having never been suspected. Had had vomiting, sometimes light-coloured discharges; was said to be occasionally jaundiced, and gradually lost his strength.

The urine (a few ounces taken from the bladder thirty hours after death), having been sent by Dr. L. with the kidneys, has been analyzed by Dr. Bacon, who describes it as follows: "Turbid; faintly acid; density 1.018. The proportion of urea is very small; and as the urine has not become ammoniacal by standing, but little urea can have been destroyed by spontaneous decomposition. A moderately large amount of albumen is found in the urine."

*December 26. Vaccinia and Varicella coexistent.*—The following case was reported by Dr. STORER as having some bearing upon the question of the identity of vaccinia and variola:—

A fortnight since, he vaccinated a child six years of age. Calling, a few days after, to ascertain if the matter had been absorbed, he found his patient covered with the eruption of chicken-pox. Visiting it again to-day with the view of revaccination, the vaccine vesicle was observed to be pursuing its regular course.

Dr. J. B. S. JACKSON mentioned the case of a patient in whom vaccination did not take effect for three weeks; the mother of the patient was capable of judging of the appearance of the vaccine pustule; the occurrence is surely a rare one.

*Single Congenital Cataract.*—Dr. WILLIAMS mentioned two cases of congenital cataract, in which he had recently operated, as having some interest in connection with the case of single congenital cataract reported by Dr. Bethune at a previous meeting. The first patient was a young lady from New Brunswick, who was affected from birth with cataract in the right eye. Vision in the other eye was perfect till she was eight years of age, at which time cataract made its appearance in this eye.

An operation had been performed on the left eye, some years since, in New Brunswick, but the opaque capsule still covered the pupil, with the exception of a mere pinhole. Dr. W. extracted the capsule from this eye through the cornea, and at the same time divided the lens and capsule in the right eye. Absorption of the right lens went on rapidly, and with suitable glasses, perfect vision was enjoyed in both eyes.

The brother of the patient, *æt.* twenty years, has been affected from birth

with cataract in both eyes; and within two years, her mother has become affected with double cataract.

The second case was an infant four weeks old, whose right eye was operated on a few days since. The pupil of the left eye is apparently clear. But it is not improbable that a cataract will eventually show itself in this eye also.

January 23, 1854. As the lens was not entirely absorbed subsequent to the former operation, the infant above named was operated on a second time on the 21st inst., sulphuric ether having been previously administered. The instrument was introduced through the cornea, and the relics of the lens and capsule completely divided. Neither operation was followed by more than a very slight and transient injection of the eye.

January 9, 1854.—*Fracture of the upper part of the Shaft and Neck of the Os Femoris in a Lady aged eighty-six.* Dr. J. MASON WARREN.—This patient, about a week before her death, fell in her room, striking on the trochanter of the right thigh-bone. She was unable to rise, and was taken up and placed in bed. On examination, it was found that the right lower extremity was shortened about an inch and the foot everted. The thigh was much swollen. No crepitus could be discovered on any motion given to the limb. She was placed on her back, the limb supported on a double-inclined plane made of pillows. She complained of but little pain in the injured part. For a few days she did well. The bowels then became constipated, the pulse failed gradually, and she died on the sixth day from the reception of the injury, apparently from the shock to the system, reduced by age. On a *post-mortem* examination, before the injured parts were exposed, an attempt was made to get crepitus, but none was produced by the ordinary motions of the limb. By extreme flexion, however, using at the same time powerful rotation, a crepitus could be distinguished. On making an incision over the trochanter down the thigh, the fat and muscles were found filled with extravasated blood. There was a comminuted fracture of the shaft of the bone just below the trochanter, and another fracture extending upwards from this into the outer edge of the socket, separating the neck of the bone from the trochanter. But little blood was effused into the cavity of the joint.

The case was interesting as showing how extensive the fracture may be, and yet, from the extravasation of blood and from other causes, one of the principal diagnostic signs, crepitus, could not be obtained.

*Malformed Heart; Interventricular Opening.*—The patient was twenty years of age, and had been under the care of Dr. CABOT for the last three years. He was of a slender figure, though not particularly small or stunted, as is said to be often the case; very susceptible to cold, and had had marked cardiac symptoms from infancy. The lividity of the face and hands was always more or less noticeable, and, on any considerable exertion, it was deep, so as to attract attention in the street. Dyspnoea often so urgent that he would be obliged, when walking, to stop and support himself; action of heart strong, and accompanied by a loud sawing, rather than bellows, sound; pulse regular, bounding, and moderately frequent. About three years ago he had active hemoptysis, and from that time his general health decidedly improved, and his dyspnoea so far diminished as to be no longer noticeable; he could split wood and walk six or eight miles without fatigue. On the 6th of December, he raised, by estimate, about a quart of blood, having been as well as usual up to that time; on the 9th, he raised about as much more, and again on the 24th to the 25th; under this he sank, and died on the 29th. Under

this attack of hæmorrhage, his dyspnœa increased, and also a hacking cough, to attacks of which latter he had always been subject; there was also much fever. At the age of four or five years this patient had scarlet fever very severely, and at the age of ten, measles; he also had disease of the spine, producing a very marked backward curvature.

The heart, on examination, was found to be of about the usual size, and the opening between the two ventricles sufficiently large to allow the tips of two fingers to pass through. Left ventricle not at all thickened; but the right, as usual, very much so. The pulmonary artery has two well-developed valves; and the passage to it, from the right ventricle, to the extent of half an inch or more from the free edge of the valves, is so much contracted that the tip of the little finger would not pass. Some abnormal formation has been generally noticed at this part in cases of interventricular opening, and in all that have been observed here, it has been so without exception. There is a direct opening of the foramen ovale to the extent of about four lines, and a small band traverses it, as if to prevent its further enlargement. Almost the whole of the left lung was consolidated by a form of disease that seemed intermediate between pneumonia and a tubercular affection; being most advanced towards the base; in the upper right lobe there was tubercular disease and a small cavity.

*Rupture of the Bladder.*—Specimen shown and case reported by Dr. CABOT. The patient was an Irishman, 18 years of age, and was brought to the Hospital at 7 P. M., on the 26th inst. At 11 P. M. on the 24th, he had fallen down stairs, whilst intoxicated, and from that time had passed no urine. The abdomen was tumefied, and quite painful; the pulse 120, and feeble; he sank gradually, and died twenty-three hours after his admission—the pain continuing to the last. A catheter was used several times, and on making pressure over the bladder, considerable quantities of urine, colored by blood, were passed; the catheter probably entered the cavity of the abdomen; some blood also followed the use of an elastic catheter.

On dissection, the bladder was found much contracted, and lacerated at the fundus, sufficiently to allow the finger to pass through; the mucous and muscular coats being everted, as in the case of a lacerated intestine, so as to remind one very strikingly of an over-ripe, purple fig. Peritonitis existed, and the cavity of the abdomen contained about five ounces of a turbid, urinous fluid. Some coagulated blood was also found in the cavity of the pelvis, about the bladder.

*Malignant Disease of the Rectum, from a Boy twelve years old.*—Specimen sent by Dr. J. P. C. CUMMINGS, of Leicester, with the following history of the case:—

“The patient was of a somewhat nervous temperament, but had no appearance of cachexia. The first appearance of any disorder was about the 25th of last September, when he had an attack of acute dysentery, since which he has complained of pain seated in the rectum, and has had frequent small discharges—sometimes as many as twenty per diem. About the first of December, he complained of great tenesmus and complete inability to evacuate the bowels. After using cathartics for some three days without success, I made an examination per anum, and ascertained the existence of the disease. I was able to reach it, and insert the tip of the finger about half an inch, but could reach no higher; all attempts to pass even a small bougie were entirely unavailing.

"After five weeks of constant suffering, the patient died on the 6th inst. Of course there was enormous fecal accumulation, but no morbid appearances except at this point, with a very considerable amount of peritoneal inflammation."

This disease is sufficiently defined, and involves the entire circumference of the intestine, more or less, to the extent of about two inches. In regard to density, thickening, and the character of the ulceration, which was quite extensive, it resembles at first sight, and perfectly, any ordinary case of scirrhus rectum. On further inspection, however, there is seen to be a considerable amount of colloid deposit, some of it comparatively firm, but in other parts quite soft; and a pearly, granulated appearance upon the peritoneal surface resembles strikingly what is seen in a specimen in the Society's cabinet of purely colloid disease of the stomach.

The age of the subject was certainly most remarkable for any other form of cancer than encephaloid, of which there were no traces in the present case; the duration of the disease, also, was short, and the circumstances under which it occurred were curious.

*Primary Encephaloid Disease of the Lymphatic Glands of the Abdomen.*—Specimen sent by Dr. THOS. H. GAGE, of Sterling, with a full history of the case. The patient was 56 years of age, and quite healthy until about eighteen months ago, since which time there has been a general decline, but without any symptoms that would lead to a satisfactory localization of the disease. There was languor, a general feeling of discomfort, depression of spirits, and an anemic, sallow, lemon-coloured complexion. Complained that he got no nourishment from his food, though his appetite remained good; also complained of a dull, heavy pain in the lumbar region. Since November, he has been under the care of Drs. Kendall and Gage, of Sterling; and has been mostly confined to his house, with an increase of the above symptoms. After a time, there came on severe pain in the left hypochondrium, which, as he said, "shot around to the back," and prevented him entirely from lying upon that side. The abdomen became quite tumid and tense, though not painful; bowels costive; digestion much impaired, with subsequent loss of appetite and loathing of food; and towards the last, vomiting of almost all food, with frequent eructations and hiccough. The mother of the patient had died of cancer of the breast; and from all appearances in his own case, it was strongly suspected that cancerous disease existed somewhere in the abdomen.

The lumbar glands in connection with the aorta and vena cava, and the glands about the pancreas and duodenum, were much enlarged, and consisted of soft encephaloid—all of the organs of the thorax and abdomen were examined by Dr. G., and were found perfectly healthy.

Primary cancer of the lymphatic glands has been noticed here in two if not three cases; and Lebert refers to twelve that have fallen under his own observation, remarking that there was only one in which the abdominal glands were the seat of the disease.

At a subsequent meeting, a case was reported by Dr. Cotting, of encephaloid disease of the glands just above the left clavicle. The cellular membrane in front of the neck was indurated, and the disease extended downwards into the thorax, so that dysphagia and dyspnoea were marked and distressing symptoms. The costal pleura was granulated, as it so often is in cancer; and there was found with it, as usual, a large serous effusion. The organs themselves, however, were quite free from cancer. The patient was 58 years of age, had been dyspeptic, and generally an invalid for ten years, but dated his last sickness only from September.

*Spinal Meningitis and Latent Pleuritic Effusion.*—Case reported by Dr. BOWDITCH. A Portuguese sailor, æt. 19, entered the Massachusetts General Hospital December 3, 1851, with symptoms of fever, as follows:—

Six days before, he had been attacked with pain in the head and abdomen, anorexia, thirst, and diarrhœa; occasional slight cough; heat of skin; great prostration. At his entrance he had the above symptoms, with one or two frothy adhesive sputa, but he had no pain in the chest; his skin was very hot and dry; pulse 120; his tongue was thickly coated and dry; abdomen full, tympanitic and painful on pressure; urine scanty, dark.

A Dover's powder was ordered by the house pupil, at night. On the next day, Dr. B. saw him, and found that the night had been restless; the abdomen was most tender in the cœcal region; his head "felt badly," but his mind was clear. Auscultation and percussion of both backs gave normal results. Sulph. quinia grs. ii. every two hours; and if at any time there was much fever, he was to have spts. ether. nitros. gttss. xxx. Continue Dover's powder and repeat, if needed.

During his residence at the Hospital, until the day of his death, twenty-eight days from his attack, he was as follows: All the symptoms improved for the first forty-eight hours; his pulse fell to 88; his skin became soft and moist; his tongue was natural, and the abdomen lost its tenseness; he still complained of no thoracic symptom. After forty-eight hours, the quinia was omitted, and during the four subsequent days he was, at first, violently delirious, but was relieved immediately on the application of leeches. He however complained of some pain in the head, and had some epistaxis. The pulse and all the other symptoms improved; so that, on the 4th, he was rational, and felt merely weak. During this period he had the common fever-mixture, viz: ℥i. of equal parts of chloric ether, nitrous ether, and liq. acet. of ammonia.

The next phase of the disease commenced with partial paralysis, and great unwillingness to move his legs. They fell, when lifted, and with great pain to the patient, who was very irritable, and unwilling to speak or move; but rational in his answers. Finally, he had great and constant pain in the lumbar vertebræ, and tenderness there, with double vision and slight strabismus. In every other function, save in the urinary secretion, which continued dark and red, with a heavy deposit of urates, he seemed doing well. No thoracic symptom was noticed by himself or others. During this period, Dr. B. blistered the spine very freely, and gave calomel in alternative doses.

The fourth and last phase was ushered in by violent convulsions, with frothing at the mouth, opisthotonos, on five separate occasions, with singing and screaming in the intervals; total blindness and great strabismus. These symptoms decreased in forty-eight hours, and he became rational, quiet, and, three days before his death, appeared better than for a fortnight previous; but the legs always remained as described. He soon, however, rejected all food; a low, muttering delirium, with picking at the bedclothes came on, and he died December 25th. The mercurials were continued during this period, and a slight ptialism appeared four days before death.

At the autopsy, the pia mater of the brain and of the spinal marrow was more corrugated than usual, and a little more subarachnoid fluid was noticed over the cerebrum; no pus or lymph anywhere; 5iiss of fluid in the lateral ventricles. Substance of brain natural in consistence, but numerous red points in it. The convolutions were flattened. The spinal marrow at its upper and posterior part, where it joins the medulla oblongata, presented, on incision, a very manifest brownish hue, similar to the colour usually seen around apoplec-



*tic masses* in the cerebrum. There was, however, no real extravasation, and the part was about as firm as the adjacent portions, though very different in colour. Over this spot, the dura mater was much thicker than on the parts below. In the middle of the spinal marrow, there was a part, an inch and a half long, which was pale, and quite diffuent, almost cream-like. The right lung was congested; the left was partially compressed by twenty ounces of saffron-coloured fluid; it was firmly adherent to the ribs at its back part, and covered with thick lymph elsewhere. It had a dense structure, but no tubercles in either lung. The bronchi of the left lung were visibly injected.

Nothing peculiar was noticed about the alimentary canal, except that the patches of Peyer were unusually distinct and reticulated, but otherwise normal. The spleen was large. Other organs healthy.

Dr. Bowditch thought that there were several points of interest in the case: 1. The sudden diminution of the pulse, and of all the symptoms of fever under the quinia. 2. The peculiar paralysis of the legs, combined with great sensitiveness to motion, opisthotonos, &c., taken in connection with the condition of the meninges and of the spinal marrow, brought this case into the category of cases of spinal meningitis. 3. The totally latent effusion into the pleura was important, and the question was suggested to his mind whether, if it had been discovered, and means used for its absorption or removal, the patient might not have recovered.

*January 23, 1854. Proportion of Fat in a Fatty Liver.*—Dr. JOHN BACON, Jr., read the following account:—

The specimen examined was received from Dr. J. B. S. JACKSON, and was part of a liver which weighed ten pounds, from an adult subject, very intemperate:

From 750 grains of the liver, 398.5 grains of fat were obtained, equivalent to 53.13 per cent. The whole liver consequently contained about five pounds five ounces of fat.

The fat is solid at the ordinary temperature of the atmosphere, but at about 98° F. melts into a nearly transparent oil, which becomes quite clear at 110°, and remaining fluid on cooling until its temperature falls to 70° F. In the living body it would, of course, be in a fluid state.

Stearin, margarin, and olein, the constituents of normal fat, are found in it, and a little cholesterin is probably present.

The only analysis I have seen of fatty livers, in which the proportion of fat is stated, are by Frerich and Boudet. Frerich found 17.26 per cent. of fat; Boudet found 31.53 per cent. in a fatty liver, and 1.77 per cent. in a healthy liver.

Dr. JACKSON. referred to the entire absence of any tubercular disease in the patient from whom the specimen was taken.

*Malformed Heart.*—The specimen was sent by Dr. LEIGH, of Townsend, and was taken from a child that lived about twelve hours. Respiration was established with great difficulty, and continued to be difficult, being attended with a slight groan at each expiration. The organ is of full size, and consists of but one auricle and one ventricle, between which two cavities is a well-developed valve. A vessel, about the size of the aorta, arises from the ventricle, and soon gives off two branches that go to the lungs; the vessels at the arch are then given off; no coronary arteries.

*Foot Torn Off by a Cable on Shipboard.*—Dr. CABOT reported this case. The subject of the accident was mate of a vessel which was being towed to

sea by a steamer; his foot was caught by the bight of a small hawser, and he was drawn up to the hawse-hole, and the foot completely removed at the metatarsal articulation. There was no bleeding. The man was brought to the Massachusetts General Hospital (the accident having occurred just outside Boston Light), and Dr. C. subsequently amputated a short distance above the malleoli.

*Ichthyosis in an Infant; Hemorrhage from Umbilicus; Death.*—Reported by Dr. GOULD. Male child of C. S. L., born Oct. 26, 1853, after a comfortable and normal labour, under the use of sulph. ether during the last three hours; weighed nine pounds. The skin was harsh, and appeared as if thickly incrustated with spicula, or fine sand; which, however, was not the case. After washing, the head was found nearly destitute of hair, there being only a fine down, and little tufts or pencils, consisting of a few hairs, half an inch in length, closely twisted, and at distances of perhaps an inch from each other; over the eyebrows the skin seemed raised into rigid points, of a pearly white colour; the face and lips were nearly natural; but elsewhere, the skin, on drying, became like tissue paper, loosely attached to the cellular tissue beneath, and presenting marks wherever folded, like paper; on the back and some other parts the surface had a granular appearance. After a few days the skin became more supple, and considerable exfoliation took place. It accorded well with that form of ichthyosis called by Alibert *ichthyose nacrée*. The first child of these parents, a female, weighing five and a half pounds, was affected in a similar manner, though much more severely, the skin being very rough, and breaking into bleeding fissures. It lived sixteen days, and died hydrocephalic.

In the present case, the first alvine discharges were colorless, and none with the usual appearances ever occurred. The child began at once to nurse, and fed plentifully. The discharges from the bowels were also numerous and copious, seven to ten daily, having at first a putty-like consistence, with a peculiar odour, and afterwards becoming thinner, less offensive, and after the use of hydrarg. cum creta, of a straw-yellow colour. Most of the ingesta were evidently discharged without being much altered. The skin very soon became jaundiced; and the urine, at first limpid, became amber-coloured.

The cord separated on the fifth day; on the ninth day, oozing of blood was discovered at umbilicus; lint, saturated with tannin, was applied, under a compress, and no blood flowed for fifteen hours; it then flowed rapidly, and by report of nurse, in a thread-like jet. Nitrate of silver was applied, and the bleeding ceased for five hours. The extremity of the cord was then drawn out, and a ligature applied to a portion of it, with a partial check to the hemorrhage. In a few hours, however, it recurred; alum, collodion, pressure, and various other means were employed without success. The bleeding became more profuse, and the child died Nov. 6, on the third day after the hemorrhage commenced. A slight exudation of blood occurred at the anus, though no appearances of blood showed themselves in the evacuations. Ecchymoses were not noticed anywhere; the peculiar state of the skin would not have shown them.

The umbilical vessels were all found pervious. The liver was very dark coloured, friable, gorged with blood; gall-bladder flaccid, containing about a drachm of clear fluid, much like synovial fluid, in which a few flocculi floated. On careful examination, the cystic and common ducts appeared to be impervious.

*Hydrophobia*.—Dr. CABOT reported the case. The patient, a healthy-looking girl, of seven years, was bitten by a dog, supposed to be rabid, at 8 o'clock A. M. of Dec. 18, 1853; she was brought to the Massachusetts General Hospital at 5 o'clock P. M. of the same day. Three lacerated wounds were found near the left elbow, made by the teeth of the dog, also one on the palm of the left hand near the thumb, and one on the cheek. There were, likewise, several slight abrasions of the cuticle on the cheek and left arm. The wounds were thoroughly cauterized with the nitrate of silver; a bath, containing carbonate of potass, given; and a poultice applied.

Dec. 19. The patient, on the morning of this day, was fully etherized, and the edges of the wound cut away by Dr. Cabot; strong nitric acid being subsequently applied to the wound; a poultice, wet with black-wash, applied.

21st. Swelling of face diminished; poultice continued; no pain; house diet ordered.

23d. Slough separating; swelling of face entirely gone; bowels regular.

29th. No untoward symptoms; sloughs separated; wounds granulating well.

Jan. 5, 1854. Wounds of face and palm of hand entirely healed; wound on arm nearly healed. All functions well performed.

13th. Discharged, well.

The little patient was readmitted to the Hospital on the 20th, and the following history is condensed from the Hospital Records, as read to the Society by Dr. CABOT: Since leaving the Hospital (Jan. 13) she has been unusually timid, and this has been manifested especially in the night time; she is afraid to sleep alone, or in a dark room, which was never the case prior to the injury received. She has been restless during most of the nights, and bad dreams have troubled her; appetite, especially for meat, has been better than usual. The first convulsive shuddering was observed this morning at breakfast time. While drinking at breakfast, she dropped her tumbler, and soon complained of inability to swallow. From that time to the present there have been paroxysms more or less frequently, lasting from thirty seconds to a minute, and resembling the catching of the breath experienced at the shock of a shower-bath, although more violent in character; a slight current of air induces these paroxysms, and so does a ray of light suddenly striking her eyes; and the sound of pouring liquids has the same effect; even the mention of these things will sometimes cause an access of convulsive action. She will carry a teaspoonful of water to her mouth, and suddenly drop it, saying she cannot swallow it. She is afraid of all who approach her, thinking they will hurt her; she fears a repetition of cauterization to her wounds; the cicatrices of these latter are, perhaps, somewhat redder than they were a week since; there has been no uneasy sensation in them; some nausea during last twenty-four hours. Apply a blister of cerate of cantharides, four by one and a third inches, over lower cervical and upper dorsal vertebræ; also compresses, wet with a solution of capsicum ʒj. in alcohol Oj, over the legs, from the knees to the ankles. The pulse, at entrance, 108; in a space of two minutes only, it would vary ten beats; very perceptibly intermittent.

21st. Patient very restless during last night; slept but little; unable to take a Dover's powder, from inability to swallow; exceedingly timid; has cried several times, from fear.

11 A. M. She ate a small piece of ice.

4 P. M. Swallowed some water, which was given to her with a spoon; pulse not to be counted by reason of its rapidity.

7 P. M. Exceedingly restless; impossible to keep her in bed; complains

a very strong desire to sneeze, said she could not; some nausea existed, and once she vomited, but no great quantity. It is also stated that, previous to the bite of the dog, she had not been a remarkably nervous child, and that she was quite courageous, having much fortitude for one so young. Her friends avoided all conversation on the subjects of rabies and hydrophobia; it was thought, however, that she might have gained some notion of the probable results of a bite from a rabid dog; several times, on retiring to rest at night, she said, "it seemed as if there were a dog under the bed," &c.; this, of course, might well enough arise from remembrance of the dog's attack.

To an inquiry whether *tracheotomy* had been contemplated, Dr. Cabot replied that he went prepared to do the operation, but at no time were there symptoms on the part of the larynx and trachea of sufficient urgency to demand such action.

In allusion to this case, Dr. BETHUNE asked whether the use of ether might not have had an influence in the production of certain of the cerebral manifestations and appearances?

Dr. Cabot stated that the ether was not chargeable with any of the bad results of the case.

Dr. C. E. WARE inquired if there were any well-authenticated instances of recovery from the bite of a rabid animal? He referred to a case of which he had heard of a man now living and employed at the Custom-House, who was, some years ago, bitten by a dog supposed to be rabid.

Dr. PERRY mentioned having seen at the School for Idiots, at Albany, N. Y., a girl who was bitten by a rabid cat, and who afterwards exhibited many of the usual symptoms observed in such cases. When seen by Dr. P., she was nine years old; the bite was inflicted at the age of four years. Previous to the injury she had been quite as bright and intelligent as children in general, but after it she gradually became idiotic.

Dr. J. B. S. JACKSON referred to research made by Dr. O. W. HOLMES in various journals, for cases recorded as having occurred in this country. None esteemed genuine were found up to the report of a case by Dr. COALE, of this city (see this *Journal* for 1849, p. 30). Dr. J. added that Dr. BOWDITCH had examined, with similar intent and result, the Records of the Massachusetts Medical Society. The case of hydrophobia, which occurred in the town of Lincoln, Mass., in 1820, was mentioned by Dr. J.; the animal which wounded the person was a raccoon.

Dr. PARKS, from a knowledge of the town, its history, and many of its residents, was inclined to believe the case referred to a genuine one; he had frequently heard it spoken about.

Dr. THAYER, of Montpelier, Vermont, who was present at the meeting, stated to the Society that *he himself* was bitten, at the age of nine years, by a rabid dog; his father, who was a physician, incised the wound deeply, and on the instant, and thoroughly sucked it; the naked hand was the part bitten; no symptoms of hydrophobia were ever manifested. The same dog bit an ox and a hog, and both these died from the effects of the bite; the ox in three weeks, the hog sooner. [Dr. T. subsequently mentioned, in conversation with Dr. J. B. S. Jackson, certain facts which are of undoubted significance, viz. that his father never spoke of the great danger to be feared from the accident to any one at the time of its occurrence; nor was Dr. T. himself made aware of the excessive peril he had been in, until years had passed, and he was a student of medicine. It is certainly not unlikely that the result might have been far different, had great terror and nervous excitement been aroused in the patient at the time of the accident. The absence

of apprehension on the part of persons bitten, must be considered of great importance as a curative element; unfortunately, instances in which it does, or can exist, are, of necessity, exceedingly rare; the knowledge of the awful tendency of such wounds being so universally diffused, and the alarm usually manifested by friends being almost unavoidably more or less evident to, and consequently effective upon, even children.—SECRETARY.]

Dr. Cabot added to his statement of the case, that, by his direction, several of the dogs bitten by the rabid one in question, were kept alive, and have not manifested, thus far, any signs of rabies. A man, bitten by the same dog half an hour after the little girl was wounded, and who came to the Hospital and received the same treatment, has to this time escaped the disease. The dog who inflicted the injuries was sent to Boston and examined; his stomach and the portion of œsophagus examined, were found quite healthy in appearance. The stomach was *entirely empty*, contrary to Mr. Youatt's statement, that it is always full of undigested and offending matters.

Dr. J. M. WARREN remarked that some years since he proposed the question to this Society, whether a case of hydrophobia had ever occurred in Boston? None of the members who were then present, there being a full meeting, had ever seen or heard of one in this city, or in the vicinity. Very shortly after, Dr. Coale reported a case which proved fatal, attended by himself, Dr. Oliver, and Dr. Buckminster Brown, which has been printed in the Records of the Society. The symptoms came on three weeks after the reception of the bite. At the very next meeting, Dr. Curtis, of Lowell, mentioned another case, which also had a fatal termination; the symptoms appearing three months after the patient was bitten. Another suspicious case occurred in Boston about the same time, and a fourth at Watertown. There have been no cases since then (1848), until the one at Longwood, near Boston, seen by Dr. Hayward and Dr. W. (and lately reported to the Society by Dr. Hayward, see preceding No. of this *Journal*, p. 84), and the present one. The occurrence of these last cases seems to indicate either a fresh inoculation of the virus, or they may, perhaps, be justly attributed to an entirely spontaneous origin of the disease. It certainly shows that, on the reception of a wound of this description, more precaution should be taken now than was formerly thought necessary.

*Laryngitis*.—Dr. PARKS reported the case, which he saw ten days since. The disease had been in progress for twenty-four hours before it was examined by Dr. P. The patient was a girl 10 years of age. On inspection, the palatal pillars were found to be vividly red, especially the right one; no membranous exudation to be seen; there was complete aphonia; constant dyspnoea, the efforts at respiration being very laboured. Dr. P. directed her to swallow *snow*; and, in from five to six hours after this, she could make a vocal sound. Two grains of calomel were given in two doses; a cold, wet bandage was applied to the throat, four leeches were ordered over the rami of the lower jaw; their bites were allowed to bleed during the entire night. Next day, the patient was very much better, and has recovered well. Hoarseness continued for several days.

Dr. Parks referred to a case successfully treated by free leeching, by Dr. J. C. DALTON, Jr.

*Acute Tuberculosis*.—Dr. PUTNAM reported the case of a child 10 years of age; slender, but had always been healthy. She had loss of appetite, coated

<sup>1</sup> Opium, in an unknown dose, had previously been administered, by the friends, to incipient narcotism.

tongue. Pulse and skin not unnatural. Had become irritable. She complained of aching in limbs; was easily fatigued. Pain over left eye. Occasional dizziness and headache. The headache was slight, and was commonly removed by a walk in the open air.

She was passing through her second dentition, and her illness was considered to be the result of the constitutional irritation arising from that state. With this view she was taken from school, and her diet and exercise carefully regulated. For two or three days she appeared to improve; but, in the course of a fortnight, although the appetite was better, and the pain in head and limbs had disappeared, she had become weaker, and her nervous irritability greatly increased. She was now confined to bed, with rapid pulse, hot skin, frequent sighing as if from fatigue, and during the day was incessantly talking to herself in a rambling, incoherent manner, for the most part in an ordinary tone, but occasionally shouting loudly. She could control herself when requested to do so, but said that the outcries were a relief. At night, all the excitement would subside, the respiration was easy, and sleep tolerably quiet. Appetite, meanwhile, sufficient; bowels regular; free from pain. She remained thus until five days before death, when the conjunctiva of both eyes was injected; the left eye slightly turned inward; pupils dilated, but no loss of vision. During the last twenty-four hours, comatose.

*Autopsy.*—Lymph beneath the membranes. Tuberculous granulations scattered through the substance of the brain and upon the membranes at the base. Walls of the ventricles exceedingly softened. Both lungs crowded with gray granulations. No other organs examined.

The whole duration of the disease was about six weeks. There was no vomiting or constipation. No intolerance of light. No loss of sensation or motion until just before death. The respiratory sounds, at an early period, were not unnatural. No cough at any time; and when to these negative symptoms we add the subsidence, at night, of the mental excitement and irregular respiration, we have the characters of a functional rather than of an organic affection.

*Teeth in an Ovarian Cyst.*—Specimen sent by Dr. HOOKER, of Cambridgeport, and shown by Dr. JACKSON, who described the case as follows:—

The patient was about 43 years of age, and had had three children. After the birth of the first, about twenty years ago, the disease probably commenced. The tumour was very hard and unyielding, but not painful, nor did it cause her any trouble, except from its bulk. Last October, she had a febrile attack, and the tumour began to soften and diminish in size, so that she thought that it was about to disappear; general health, which had been previously delicate, declined from this time.

The cyst contained three or four quarts of a broken-down curdy fluid. Parietes generally dense and rather thick. Upon the inner surface is a thin, flat piece of bone, about one and a half to one and three-quarter inches in extent. The teeth, six in number, are set in a piece of bone about three-fourths of an inch in length, two of them being firmly and the rest only loosely connected; three of them are quite irregularly developed, and it is impossible to name any one of them satisfactorily. The soft parts immediately about this last bone closely resemble the gum, and the surface is covered by epithelium; being attached to each extremity, but otherwise standing out freely into the cavity of the cyst. Of the numerous cases of ovarian disease that have come before the Society, this is the only one in which teeth have been found.

# Conversion Hysteria in Childhood

ALANSON HINMAN, M.D., Tenafly, N. J.

The frequency of conversion hysteria in children is impossible to estimate accurately, as the variability in the use of the diagnostic criteria is marked. It is, however, a rare condition. It is the feeling of the staff of the North Carolina Baptist Hospital Pediatric Service that the number of cases seen here is greater than that expected on the basis of the experience at other institutions.

One of the possible explanations for this apparently higher incidence is the predominantly rural culture of the referral area of this hospital. This area, in spite of the rather recent increase in industry, is still one of the last truly rural cultures in the nation. Families live in isolation or semi-isolation, with a strong patriarchal control. Folklore and superstition are integral and powerful parts of the culture. Modern agricultural methods are not as yet widespread. Sanitation, nutrition, education, and sophistication are still lacking, at least in any modern up-to-date manner, to rather significant portions of the populace of the area. It is not the economic backwardness but the cultural infantilism that seems to predispose to hysteria. The grand hysterical attacks of the earlier writers seldom occur now in urban populations, since society has matured and no longer allows uncontrolled emotional releases. Hysteria is a relatively poor term, since the lay connotation of wild excitement and emotionality in females is often carried over into the medical usage of the word. Furthermore, it

denotes a specific organ, the uterus, which is rarely associated with the syndrome.

Conversion, on the other hand, is the very cornerstone of the present-day concept of the pathogenesis of this rather serious psychoneurosis of childhood and later life. In simple non-Freudian terms, the dynamism—conversion—is an unconscious expression in physical symptoms of emotional conflicts. It is this unconscious expression that differentiates conversion hysteria from malingering or hypochondriasis.

Conversion, in the Freudian concept, results when instinctive thoughts or wishes are unacceptable to the person and cannot be repressed strongly enough. There is then a displacement of them to a neutral part of the body and expression in somatic symptoms. Since it is felt that, for the most part, these instinctive wishes are genital in origin, conversion would not be expected to occur prior to the onset of genital primacy at 2 to 3 years of age. When it does occur, it represents a regressive tendency, to the pregenital situation of self-love.

It is not possible to cover the entire field of symptoms found in conversion hysteria. Table 1 lists the commoner forms seen.

One of the important differential points in conversion hysteria is that although the symptoms may closely simulate actual organic processes and may even, if long continued, lead to actual physical changes, such as disuse atrophy, contractures, trophic changes, and others, careful and repeated examination will show them to be simulations. They are generally bizarre and dramatic. The symptoms are absent during sleep. They seldom fall into anatomical or neurological structural units. In children, especially, the symptoms are inclined to be all-or-none reactions, i. e., no pain is felt,

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From the Pediatric Service of the North Carolina Baptist Hospital and the Department of Pediatrics of the Bowman Gray School of Medicine of Wake Forest College, Winston-Salem, N. C. Markle Scholar in Medical Science.

often sudden and copious; that they are sometimes attended with severe pain; that the character of the fluid corresponds almost exactly with that contained in the cavity of the deciduæ; and that they do not generally operate unfavourably on the course of pregnancy, is it not reasonable to suppose, with Velpeau, that the above-named cavity is, in many cases at least, the source of the flow? The opinion of Naegelé seems also to be not unlikely, viz: that the fluid is secreted by the uterus itself, and finds its way, behind the membranes, to the mouth of the womb, by gradually detaching them from its internal surface.

Dr. WILLIAMS read an account of two cases of successful operation for the removal of opacities of the cornea.

CASE I. *Pathological Changes of Cornea following an Affection of the Fifth Pair of Nerves. Operation.*—Mrs. —, a patient upwards of fifty years of age, came under the care of Dr. W. on the 28th of March, 1852. For ten years prior to this date, she had been subject to neuralgic pains about the head and back of neck. About four years since, she began to have occasional pains in the right eye, and thought her sight was less good than usual. Neither her ordinary medical attendant, nor another gentleman to whom she applied, could at this time discover any morbid appearances on examination of her eyes. Appropriate remedies were, however, employed. Some weeks after, the pain having gradually increased, and being accompanied by photophobia, she was informed that serious inflammation existed in the right eye. This did not yield to mild use of counter-irritants and applications of leeches, and she was advised to give her eyes rest, and to omit all treatment—a very unfavourable prognosis being at the same time given. She remained in a darkened room for several months, suffering most of the time intense pain. Afterward, under other advice, active treatment was resumed; but, notwithstanding a persevering use of active antiphlogistic and alterative means, the disease continued to advance, and the pains in right eye became more severe and continuous. The left eye was attacked about two years from the first invasion of the malady, and its progress in this eye did not seem to be arrested by vigorous treatment; salivation, setons, blisters, and depletion having been employed in vain.

When first seen by Dr. W., her condition was as follows: Though her room was darkened by closed blinds and thick woollen curtains, her intolerance of light was such as not to allow of the voluntary opening of the lids. Her eyes were never entirely free from pain, and she had daily paroxysms of intense suffering, only partially relieved by the use of morphia. A small amount of light being admitted for an examination of the eyes, the right cornea was found entirely leucomatous, with some injection of conjunctiva and sclerotica. The lower and central portion of the left cornea was opaque, and the lower edge of the pupil was adherent to its inner surface. Even this hurried examination seemed to cause severe suffering, which continued for some time.

She was ordered good diet, and one of the ferruginous preparations. Tinct. humuli, ʒj. to be taken thrice a day, and the morphia resorted to only when the pain seemed uncontrollable by other means. A collyrium of diluted vin. opii, and a sedative lotion, were advised as local applications.

A month after, she was more comfortable, as she said, than for four years previously. Is forced to take morphia once in three or four days, but, in the intervals of the paroxysms, can open the eyes, tolerate a considerable amount of light, and perceive large objects. Eyes nearly free from injection, and an examination caused little pain.



seizures ceased, although no medication had been given. From this point on, report was built up through frequent interviews. A boarding home was found and the patient was followed for the next six months in the substance clinic. At the end of this time she was able to go to her own home and was doing well in the sixth grade, although her intelligence quotient was only 67. There was no recurrence of the symptoms during a period of 24 months; she was under observation.

Case 2.—A girl was admitted at the age of 9 years. Family and past history were not of any significance. Her present illness started with abdominal pain 21 months prior to admission, without relief of her symptoms. A complete urological work-up including cystoscopy was done 18 months prior to admission, but there was no relief of her symptoms. Tonsillectomy and adenoidectomy were performed 10 months prior to admission, but the patient continued to have abdominal pain. Nine months prior to admission, the patient was severely ill with varicella for one week. From then until admission she was unable to walk. Eight months prior to admission she began to have regular daily periods of hyperventilation, at first between 8 and 9 a. m., later between 4 and 5 p. m. She was seen in the outpatient department of the North Carolina Baptist Hospital for the five months prior to her admission, and extensive investigation revealed no organic cause for her symptoms. The patient remained in this hospital for 52 days, at the end of which time organic neurological illness had been ruled out. With the aid of psychotherapy and physical therapy she became able to walk and the abdominal pain disappeared. She remained well and active and made a satisfactory adjustment to the second grade, two years behind the grade in which her chronological age would have placed her.

These cases are picked because they represent the two symptoms most frequently seen in this series and demonstrate the lengths to which attempts to establish organic pathology may go before the psychiatric aspects of the picture are clarified and the diagnosis made.

One word of warning, though, may be found in one case of an 11-year-old boy who was not included in this series. Repeated investigations of his neurologic system and gastrointestinal tract failed to reveal evidence of organic disease which might have caused his vomiting and dysphagia. He was treated psychotherapeutically for six months without success. At

commonest in the precadolescent years. There were 21 girls and 7 boys, also an expected figure. The choice of symptom is outlined in Table 3. Nine of the patients showed polysymptomatic conversions. It is the usual experience to have the child pick one symptom and stay with it, and this is what the greater percentage in this series did.

To illustrate some of the difficulties encountered in making the diagnosis, there follow brief abstracts of two case histories. Case 1.—A girl was admitted at the age of 11 years with the chief complaint of seizures of undetermined etiology. Her family history is of interest in that her parents were first cousins; the mother had had four children by a previous husband, three of whom lived out of the home. The patient was the oldest of four children in the present marriage. The family lived in utter squalor, with pigs literally sharing the living room. Her past history was essentially noncontributory. Her present illness began with acute nephritis two and one-half months prior to admission. She was hospitalized near her home for a week, improved, and was discharged home. There was an exacerbation of the nephritis, and she was rehospitalized. In a short while she was again discharged. After a third reinfection and exacerbation she was hospitalized and then discharged to a boarding home near the hospital. On the day of her final examination before going to her own home, and just before she was to be taken to the hospital for this examination, she fell to the floor in what was described as a fit. She was immediately hospitalized and was treated for the next month with a variety of sedatives and anticonvulsant medications. Either anesthesia was the only method by which her seizures could be controlled. At the end of the month she was transferred to the pediatric service of the North Carolina Baptist Hospital for further evaluation. On admission she was having bizarre groping movements of the arms; her eyes deviated upwards and to the left. She became delirious on the ward, spoke of seeing her father's head in a gully, a baby sitting on the head of her bed, and expressed a fear that the water pipes would fall on her. She refused to eat and had to be given intravenous feedings. Routine laboratory studies were within normal limits. An electroencephalogram was reported as follows: "This tracing shows no abnormality and it is considered within normal limits." Calm handling by the medical and nursing staffs with firm but gentle insistence that intravenous feedings would be continued until she began to eat quieted her, and she began to take food on her third hospital day. At the same time her

CASE II. *Removal of Central Opacity of Cornea.*—Jane, æt. 20, a domestic in the family of a physician, got a few drops of a solution of corrosive sublimate into her right eye in August, 1850. Much pain was felt at the moment, and she was confined to her room for a week by inflammation which ensued. This was subdued by the use of a mild collyrium. An ulceration was noticed at this time, but she suffered no inconvenience for several months. She then began to complain of pain occurring several times a day, and accompanied by a flow of tears. This especially happened early in the morning, when over the fire, or when washing or ironing.

In May, 1852, the ulcer was of considerable depth, with ragged edges, and nearly filled with a whitish mass. No vessels in its neighbourhood. It was touched every second day with a saturated solution of arg. nit., and afterward with a crayon of sulph. cupri, and in ten weeks the edges of the ulcer became more smooth. The frequency of the pain seemed diminished by these remedies.

Was seen by Dr. Williams on the 12th of October, 1853. She still complained of pain and lachrymation. The centre of cornea was occupied by what seemed a deposit of some foreign substance, but no such deposit could be accounted for from her having used collyria of lead or other substance liable to cause its formation. Vision was indistinct from the opacity itself, and from the irritation evidently existing. Ether was administered, and a scale of opaque matter easily removed. On chemical and microscopic examination, no mineral or earthy substance could be detected.

The epithelial layer, around the scale which was removed, was slightly cloudy, but the idea was entertained that it would be thrown off, or its transparency be restored, without other aid than the natural processes of absorption and repair. Such did not prove to be the case. The pain and uneasiness of the eye were entirely relieved; but, as a visible opacity remained, and vision was still imperfect, a second operation was performed on the 11th of January, 1854, three months subsequent to the first. After insensibility had been induced, the globe was held by seizing the conjunctiva with fine forceps, and the opacity removed, in small portions, by shaving off the epithelial layer by means of a cataract knife. No inflammation ensued. The inconvenience felt during a day or two was rather from the parts of the conjunctiva which had been pinched by the forceps than from the wound of the cornea. The transparency of the cornea is entirely restored, and vision as good as before the accident.

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ART. IV.—*Ligature of the Gluteal and Internal Iliac Arteries.* By CHAS. S. TRIPLER, M. D., Surgeon U. S. Army. (Communicated by THOS. LAWSON, M. D., Surgeon-General U. S. A.)

ON the afternoon of the 8th of November, 1853, I was called in haste to see a man, said to be bleeding to death from a cut. Dr. Bertody was in my office at the time, and, accompanied by him, I repaired immediately to the spot.

We found the patient in a state of syncope, and deluged with blood. Upon inquiry, we learned that he had been engaged in pulling down a fence, and,

# Congenital Stenosis of the Aortic and Pulmonary Valvular Areas of the Heart

## *Indications for Early Surgical Relief*

ARTHUR J. MOSS, M.D.; FORREST H. ADAMS, M.D.; HARRISON LATTA, M.D.;  
BERNARD J. O'LOUGHLIN, M.D., and WILLIAM P. LONGMIRE JR., M.D., Los Angeles

The grave prognostic import of congestive heart failure incident to isolated pulmonary stenosis or to aortic or subaortic stenosis is well known to those interested in the field of cardiology. In fact, it is not an extreme rarity for sudden death to occur even in the absence of recognizable evidence of cardiac failure. Awareness of these hazards has resulted in a drastic lowering of the optimal age at which special diagnostic procedures and definitive surgery are undertaken. Because this recent swing of the pendulum has received little attention in the pediatric literature, it is felt that a discussion of this problem may be of value. The following case reports have been selected from the patients seen in our pediatric cardiac clinic to illustrate the importance of early diagnosis and of prompt surgical relief in patients with advanced degrees of obstruction.

## Report of Cases

**CASE 1.**—A 15-month-old Caucasian girl was admitted to the U.C.L.A. Medical Center for evaluation of a heart murmur which was first heard at the time of her birth. Cyanosis of the hands and feet noticed at one year of age had become progressively more pronounced up to the date of admission. There were no other symptoms referable to the cardiovascular system.

**Physical Examination.**—Physical examination revealed a pale infant with cyanosis of the extremities and clubbing of the fingers and toes. Blood

pressure determined by the flush technique was 64 mm. Hg in the right arm and 62 mm. in the right leg. A Grade 3 harsh systolic murmur was audible over the entire precordium, being maximal at the second interspace to the left of the sternum. An associated systolic thrill was palpable over the pulmonic area.

**Laboratory Data.**—The erythrocytes numbered 8,630,000 per cubic millimeter, with 15.0 gm. per 100 cc. of hemoglobin, and the hematocrit value was 52%. Teleroentgenograms disclosed a fairly marked degree of cardiomegaly, with prominence of both the right and the left ventricle. The pulmonary vessels were small, as was the waist of the heart. The lung fields were clear, and the appearance was consistent with that of a complicated tetralogy of Fallot (Fig. 1). The electrocardiogram showed evidence of extreme right ventricular hypertrophy.

**Course.**—A right heart catheterization was performed two days after admission to the hospital.

Fig. 1 (Case 1).—Roentgenogram, showing marked cardiomegaly and small pulmonary vessels.



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From the Children's Medical Group and the departments of Pediatrics, Pathology, Radiology, and Surgery, University of California School of Medicine at Los Angeles.

to have that effect. Further examination, however, showed that this was not of itself sufficient, but that compression of both vessels was required to arrest the bleeding. It was then decided to plug the wound firmly, and wait for daylight to take up the common iliac artery.

At 10½ A. M. of the 13th, Drs. V. Mott, Jr., Bertody, Nott, and Hitchcock met me at the house of the patient. The dressings were removed, and another thorough exploration of the wound instituted, with results similar to the preceding. After an anxious consultation, it was decided that the gluteal artery should be first tied, and then, if further operation were required, a ligature should be placed upon the external iliac.

In the presence of the gentlemen above named, and assisted by Drs. Mott and Bertody, I enlarged the wound upon the buttock, divided the glutei muscles, and exposed and tied the gluteal artery as it emerged from the pelvis.

All bleeding was at once arrested. The clots were removed by the finger from the whole extent of the original wound, as far as they could be reached, the wound itself kept open, and we remained an hour or more watching the effect. There being no return of hemorrhage during this time, the wound was drawn together with two or three stitches, a bandage nicely applied, and we retired, felicitating ourselves upon the happy result of our labors.

About 2 P. M. of the same day, I was again sent for, with the alarming intelligence that the bleeding had recurred with as much force as ever. I dispatched the messenger to summon my associates, and lost no time myself in repairing to the bedside of the patient.

I found the bleeding again arrested by nature, and I then waited quietly for the other gentlemen. In a few minutes, Drs. Mott, Bertody, and Nott arrived. The bandage was removed, the points of suture divided, the coagula cleared away, but no hemorrhage appeared. A napkin was thrown loosely over the wound, and we waited a few moments to watch the result. Upon removing the napkin, in about ten minutes, we found the cavity again filled with arterial blood. This was sponged out, when the swelling up of the vital fluid again ceased. It was a puzzling case. We were, as yet, *not sure* that the bleeding vessels were branches of the femoral, though there was an aneurismal thrill in the course of that artery. They might be derived from the internal pudic, the ischiatic, or obturator arteries. Active and continuous hemorrhage was necessary to enable us to determine this point. The circulation was too feeble to afford the requisite current. Notwithstanding the exhaustion of the patient, he stoutly resisted every persuasion to swallow a little brandy and water. At length, by positively insisting upon his obedience, we succeeded in giving him some while the wound was perfectly clean. In a few moments, the bleeding slowly and sluggishly returned. Then firm pressure was made upon the femoral by each of the gentlemen present, with no effect, and all were satisfied that the hemorrhage did not proceed from any branch of the external iliac. Ligation of the internal iliac was promptly decided

The histologic appearance of the small foci of scarring in the myocardium suggests that focal infarctions and cardiac failure could account for the episode of tachycardia for which the patient was hospitalized approximately four weeks before death. The stenosis of the ostium of the left coronary artery probably developed gradually, facilitating a collateral coronary circulation, since

The histologic appearance of the small foci of necrotic nuclear fragments, slightly hyperemic, and a few fat droplets. The sinusoids were only slightly hyperemic. The liver cells showed slight atrophy and a few fat droplets. The splenic pulp was phagocytosed lipid. Large areas of fresh hemorrhage were scattered throughout the myocardium, except in the posterior portion of each. These areas lay in the distribution of the left coronary artery. The right coronary artery supplied the posterior portion of the interventricular septum and left ventricle. Just beneath the aortic valve was a diaphragm formed by a ring of fibrous tissue surrounding a hole with a diameter of 7 mm. The septum membranaceum could not be identified. The cusps of the aortic valve were thick, and the commissures were fused. The aortic intima was

Microscopically the myocardium from the left ventricle showed small scattered areas of fibrosis replacing muscle fibers. The scars contained loose collagen fibers which had not yet hyalinized. An occasional macrophage containing hemosiderin was seen, and foci of fresh hemorrhage were present. Most of the alveoli in the lung contained the proteinaceous deposit of edema fluid and a moderate number of mononuclear cells, some with phagocytosed lipid. Large areas of fresh hemorrhage were also present. The splenic pulp was phagocytosed lipid. Large areas of fresh hemorrhage were scattered throughout the myocardium, except in the posterior portion of each. These areas lay in the distribution of the left coronary artery. The right coronary artery supplied the posterior portion of the interventricular septum and left ventricle. Just beneath the aortic valve was a diaphragm formed by a ring of fibrous tissue surrounding a hole with a diameter of 7 mm. The septum membranaceum could not be identified. The cusps of the aortic valve were thick, and the commissures were fused. The aortic intima was

The lungs exuded a large amount of yellow frothy fluid from the cut surface. The liver and spleen appeared hyperemic. The spleen was large, weighing 180 gm., but the liver showed little, if any, increase in weight, weighing 780 gm. Microscopically the myocardium from the left ventricle showed small scattered areas of fibrosis replacing muscle fibers. The scars contained loose collagen fibers which had not yet hyalinized. An occasional macrophage containing hemosiderin was seen, and foci of fresh hemorrhage were present. Most of the alveoli in the lung contained the proteinaceous deposit of edema fluid and a moderate number of mononuclear cells, some with phagocytosed lipid. Large areas of fresh hemorrhage were scattered throughout the myocardium, except in the posterior portion of each. These areas lay in the distribution of the left coronary artery. The right coronary artery supplied the posterior portion of the interventricular septum and left ventricle. Just beneath the aortic valve was a diaphragm formed by a ring of fibrous tissue surrounding a hole with a diameter of 7 mm. The septum membranaceum could not be identified. The cusps of the aortic valve were thick, and the commissures were fused. The aortic intima was

Fig. 3 (Case 2).—Photograph of the aortic stenosis was separated from that part of its attachment at the base of the right anterior aortic leaflet during cardiac massage. The dark rectangular block lies in the original lumen. The white arrow at the right points to the stenotic mouth of the left coronary artery. The white arrow at the left points to the uninvolved mouth of the right coronary artery. (The photograph was taken by Dr. Dean L. Meyer.)



Autopsy Findings.—The heart was markedly enlarged, weighing 400 gm. (normal weight about 116 gm.). The epicardium was hemorrhagic over most of the left ventricle. A recent surgical incision below the aortic valve was closed with sutures. All chambers of the heart were dilated, especially the left atrium and ventricle. The foramen ovale was closed, and the tissues were fused. The tricuspid valve ring measured 8.8 cm.; the pulmonary, 5.5 cm., and the mitral, 8.3 cm. These valves were well formed and competent. The right ventricle was moderately hypertrophied, and the myocardium was of good color. The ductus arteriosus was obliterated. The left atrium and ventricle showed marked hypertrophy. The left ventricular wall was 15 mm. thick, and the right ventricular wall was 7 mm. thick. The endocardium of the left ventricle was irregularly thickened, and the mottling of myocardial hemorrhage could be seen through it. Many areas of light gray fibrous tissue and hemorrhage were scattered throughout the myocardium of the left ventricle and interventricular septum, except in the posterior portion of each. These areas lay in the distribution of the left coronary artery. The right coronary artery supplied the posterior portion of the interventricular septum and left ventricle. Just beneath the aortic valve was a diaphragm formed by a ring of fibrous tissue surrounding a hole with a diameter of 7 mm. The septum membranaceum could not be identified. The cusps of the aortic valve were thick, and the commissures were fused. The aortic intima was

Course.—The patient responded well to digitalization and was scheduled for a right heart catheterization. On the day of catheterization a bigeminal rhythm was observed prior to initiation of the study. At the start of the procedure, when the catheter tip was inserted into the right atrium, ventricular tachycardia was observed on the electrocardiogram. The catheter was immediately withdrawn to the iliac vein, and 50 mg. of 10% procainamide (Pronestyl) hydrochloride was injected into the catheter, resulting in a prompt reappearance of the bigeminal rhythm. Because of the extreme irritability of the heart, it was decided to abandon the procedure in favor of angiography. However, before this could be accomplished, cardiac arrest occurred, and it was found necessary to perform a thoracotomy and institute cardiac massage. A partial aortic incision was performed while the heart was massaged, but, despite all efforts, the patient died.

With the diagnosis of aortic or subaortic stenosis (Fig. 2). An electrocardiogram showed evidence of a Wolff-Parkinson-White syndrome, and, because of this, specific chamber hypertrophy could not be assessed.

*Evening.* I found him with distressing hiccough; pulse 96; tongue moist and clean; abdomen tympanitic, but without tenderness; mind somewhat disturbed. His nurses had again neglected him, and that seemed to increase his fretfulness and irritability. His bowels had not been moved since the operation (then forty-eight hours), and he told me he had taken an injection a little while before, but it had passed without any other effect. I gave him a full anodyne, applied a warm emollient cataplasm over the abdomen, again enjoined the support his anæmic condition so strongly demanded, and ordered ol. ricini, ℥j, to be given at daybreak in the morning.

*Wednesday, 16th.* At 10 A. M. I found him without hiccough; his abdomen much softer; a little tenderness at the edge of the wound, but none elsewhere; pulse 96; skin comfortable; tongue disposed to become dry, but clean; more anxiety than I liked, but, upon the whole, as well as the night before. The oil had been administered but a short time before my visit, instead of at daybreak, and, of course, had not yet operated. Ordered camphor julep, in case of return of hiccough.

Soon after I left him, he became worse; the hiccough returned, and he sank and died at about 6 or 7 P. M., three days after the operation. With great difficulty, I succeeded in getting a hurried autopsy, twenty hours after death. Drs. Mott, Gray, and Hitchcock were present.

There had been sufficient peritonitis to produce adhesion of that organ to the tissues in relation to it, but without injection of its vessels, deposit of fibrin, or effusion of serum. The ligature was found embracing the internal iliac an inch below the bifurcation, and a firm coagulum already deposited above the point of ligation.

This man was thirty-six years of age, had lived an intemperate and irregular life, but, at the time his injury was received, seemed to be free from disease.

I cannot close this communication, without recording my deep sense of the able and intelligent assistance rendered me in both operations by my friends, Bertody and Valentine Mott, Jr. I fully believe that, with proper and assiduous care on the part of the nurses, the termination of this case would have been different.

SAN FRANCISCO, CAL., January 11, 1854.

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ART. V.—*On the Fevers of Syria.* By JOHN WORTABET, M. D.  
A native Syrian physician.

MEDICINE is an eclectic science. It is only by the accumulated observation of sagacious minds, often following distinct and sometimes opposite theories and modes of treatment, that this science has become what it is at

in the posteroanterior and lateral positions, 36 frames being made in each plane over a period of 10 seconds. As is readily seen in Fig. 4B, the stenotic pulmonary valve was clearly visualized. Because of the extremely high pressure in the right ventricle and the low cardiac output, it was decided to perform emergency surgery.

*Surgical Findings.*—On the evening of the day of the catheterization, after satisfactory induction of anesthesia, a left submammary incision was made, and the chest was entered through the third interspace. Upon exposure of the heart, it was observed that the myocardium was extremely cyanotic. It was felt unwise to delay the valvulotomy to determine pressures, and, consequently, two 000 nonabsorbable surgical (silk) stay sutures were placed in the wall of the right ventricle. A stab wound was then made, and a probe was passed up the pulmonary outflow tract, and the valve was palpated. The probe could not be passed beyond the valve. The Brock knife was then inserted through the valve, and within 30 seconds the myocardium became much less cyanotic. The pulmonary artery seemed to have a better pressure following the valvulotomy. This was confirmed by direct systolic pressure measurements of 50 mm. Hg in the right ventricle and 30 mm. Hg in the pulmonary artery.

*Postoperative Course.*—The postoperative course was uneventful, and the patient was discharged from the hospital. Five months later she was asymptomatic, and there was no visible cyanosis.

### Comment

The pulmonic lesion referred to in the present discussion is severe valvular stenosis with an intact ventricular septum with or without a right-to-left atrial shunt. This type of lesion possesses many features in common with severe stenotic lesions at or below the aortic valve. Infundibular pulmonic stenosis is not considered here, since our experience is in agreement with the contention of others that this rarely occurs as an isolated lesion.<sup>1-4</sup> It should be mentioned, however, that all investigators do not adhere to this point of view.<sup>5-7</sup>

*Physiologic Considerations.*—In the absence of an interventricular septal defect to act as an escape valve, a severe stenotic lesion at the outflow tract of either ventricle places a great burden on the chamber itself. With pronounced obstruction, the cardiac output tends to be low and fixed.

Regardless of which ventricle is primarily affected, the end-result is reduced systemic and coronary flow. This accounts at least in part for features such as a small peripheral pulse, chest pain, syncope, myocardial insufficiency, ventricular failure, and sudden death.

*Diagnosis.*—Early recognition is of the utmost importance. A detailed description of the pertinent clinical features, however, is not within the scope of this paper. For such a description, the reader is referred to the excellent works of Abrahams and Wood<sup>8</sup> and of Downing.<sup>9</sup> The murmur in both conditions is characteristically loud and harsh and systolic in time. It is widely distributed but is usually maximal in the second interspace to the left of the sternum with pulmonic stenosis and in the second interspace to the right of the sternum with aortic or subaortic stenosis. A systolic thrill is commonly present and in the case of aortic or subaortic stenosis may accompany the murmur up the neck vessels. With severe pulmonic stenosis the second pulmonic sound is usually single and either diminished in intensity or completely absent. Visible cyanosis may appear at any time with severe stenosis of the pulmonary valve, and, although usually of peripheral origin, it may on occasion be of central origin. When of central origin, it results from a right-to-left shunt through an atrial septal defect or foramen ovale. Clubbing and polycythemia may then be pronounced, and differentiation from Fallot's tetralogy may be difficult. Roentgenographic and electrocardiographic studies show evidence of enlargement of the left side of the heart with severe aortic or subaortic stenosis and of the right side with advanced valvular pulmonic stenosis. In the latter condition the lung fields are hypovascular and post-stenotic dilatation of the main pulmonary artery can be demonstrated in the roentgenogram.

### Indications for Special Diagnostic Studies.

In general, the recognition of severe degrees of the malformations under consid-

often run into each other. Quotidians may become tertians, and tertians quartans; and all these may run into the remittent and then into the continued types of fever. It prevails mostly during the summer and autumn.

*Symptoms.*—The symptoms of intermittent fever are so much the same all over the world, that it will be needless to describe them particularly. Before the chill commences there is a general lassitude of body and mind, indicated by yawning, stretching, and entire aversion to corporeal or mental efforts. This is succeeded by a well-marked chill, which, in the first few attacks, is long protracted, and quite severe; but in old cases becomes much shorter and lighter. The hot stage is ushered in by occasional flushes of heat along the course of the spine, which follow each other, more and more rapidly, until the whole body is enveloped in one continuous flash of burning fever. Contrary to expectation, the symptoms of this stage do not seem, from the accounts in medical books, to be severer in this country than in colder or more temperate climates; the flushed face, red tongue, thirst, full and frequent pulse, preternatural heat, high coloured and scanty urine, seem to acquire no intensity from the influence of a warmer temperature. This stage is succeeded by the third of authors, the *sweating*. Slight drops of perspiration on the palms, and about the forehead, neck, and chest, increase and extend until very often the bed of the patient is literally wet through. After this, the fever, with all its attendant symptoms, vanishes altogether.

Very often, the paroxysms are accompanied by an inflammation of some viscus. Inflammations of the stomach, liver, and spleen are the most common. But on the cessation of the paroxysm, the inflammatory symptoms are either mitigated or entirely subside. Such inflammations, however, when they exist during the intermission, generally accompany well-established cases. It is hence, perhaps, that we have ultimately the troublesome sequelæ of intermittent fever, in the form of chronic inflammations, indurations, and abdominal dropsy. The stomach and liver are the most liable to chronic inflammation, and the spleen and peritoneum to induration. By far, however, the most common consequence is an enlargement of the spleen, which sometimes attains to an enormous extent. If inflammation must necessarily precede induration, as a rule in morbid physiology, we have not been able to detect it in many instances; but it is not impossible that the inflammation was of such an obscure, subacute character that it eluded notice.

*Causes.*—From the almost general consent of authors since the times of Lançisi, as well as from our personal observation, we have no doubt that marsh miasm is one of the remote causes, probably the most efficient among them. We are aware that this has been denied by some recent authors, and other causes have been adduced in its place; but, after examining these new views, we can neither concur in the cryptogamous theory, nor in that of the hepatic of summer and pulmonary of winter fevers.

Strictly speaking, there are very few marshes in this country, at least where we have resided or travelled. But in looking for miasmata in places



### Summary

The case histories of two children with severe valvular pulmonic stenosis and one with pronounced subaortic stenosis are presented. Two of the children died, one while hospitalized and awaiting surgery. The third, an infant with pulmonic stenosis, recovered after emergency surgery. The importance of and the indications for early definitive diagnosis and treatment are discussed. In selected cases this must be of an emergency nature.

### Addendum

In the interim between the preparation of this paper and Nov. 21, 1957, we have encountered one additional case of a 12-month-old male infant with pure pulmonic stenosis who had cyanosis since the early neonatal period. A clinical diagnosis of tetralogy of Fallot had been made elsewhere and the patient had been observed by a cardiologist since birth. The true nature of the abnormality was established by right heart catheterization and selective angiocardiology, the pressure in the right ventricle being 138/0 mm. Hg. Operative repair was performed by Dr. James V. Maloney Jr., with excellent results.

5830 Overhill Drive (43).

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villages which are situated between it and the marsh are, on the whole, remarkably healthy. Yet, Hasbeyah is a notorious place for intermittents of the most obstinate character which we have ever seen. This strange phenomenon can only be accounted for, in our view, by the extreme filth of the town, which hardly knows any parallel. We will not disgust our readers with the narration of particulars. Suffice it to say that, after long and careful examination, we can assign no adequate cause for the prevalence and obstinacy of the fevers of this place, but its filthy streets, houses, and habits of the people.

Were we to extend the argument to other places, we should find much to support our position. We should have the same support from appealing to the acknowledged predominance of this disease among the poor, and others who are exposed to noxious effluvia, though their locality be entirely free from marsh miasm.

To these causes may be added sudden atmospheric vicissitudes, which prevail to a great extent in some localities of this country during the autumn. It is well known that such sudden changes are a fruitful source of fevers, but we have never had an opportunity to see the operation of this cause when acting alone; and we cannot tell, therefore, how much importance is to be attached to it in producing or promoting intermittents.

The *exciting causes* are errors in diet; over-exertion, corporeal or mental; strong emotions; imprudent exposure, especially at night, &c. &c. But, as it has been philosophically observed, these causes may be exciting or predisposing, according to the order of events.

*Treatment.*—In *simple* intermittent fever, we have never seen a case that demanded any treatment during the paroxysm. Nature does her work so promptly and effectually, that the interference of art is unnecessary if not injurious.

During the intermission, if the state of the bowels demanded it, we have been in the habit of giving a purgative. But we do not think that the exhibition of purgatives is essential to the efficacy of the quinia, as some suppose. To a large number of our patients no cathartic was given, but the result of the quinia was completely satisfactory. With emetics, as preliminaries, we have no experience; nor do we think they can be needed except in extraordinary cases.

The great antiperiodic remedy, quinia, has never failed, in our hands, to stop the paroxysms. One scruple, taken in two-grain doses, during two intermissions, two-thirds of which was given in the first, and the remaining third in the second, was sufficient in all recent cases. We prefer, however, uniting to the quinia small doses of sulphate of zinc or extract of gentian, as it may be taken in the form of powder or pill. Under such a use of this remedy, we have frequently stopped the coming fit, and invariably the one succeeding it. We have seen the quinia employed in different ways, but our method was so satisfactory that we have never been tempted to change it.

In old cases—of some months' standing—we have found it necessary to give this article in a larger quantity. We have never exceeded, however, a drachm, divided into two-grain doses, and given for some length of time. In such cases, a scruple would be sufficient for stopping the paroxysms; but it is to preclude a relapse that the medicine should be extended for some time. Where quinia had been taken before the patient applied to us, and he had had several relapses, we put a blister to the epigastrium, and gave the quinia largely, and then followed it with tonic or bitter decoctions. In such cases, a course of mercury has been recommended, but we have never had occasion for it. We may say the same of arsenic. One great objection to the use of the last article in this and other diseases, is the carelessness with which medicine is often taken in this country, and the sad consequences of a mistake.

In our present place of residence, we have not been able, after all our efforts, to put every case out of the reach of a relapse. Nor is this to be wondered at, when we consider the continued influence of the remote, and sometimes the exciting cause of this disease. Under these circumstances, change of air seems to be the most hopeful of any treatment.

Occasionally, a little fever, indicated by headache, thirst, frequent pulse, &c. filled the intermissions, and thus contraindicated the use of quinia. To subdue these symptoms, we have found a few leeches applied to the epigastrium, or to any tender spot in the abdomen, with acidulated drinks, low diet, and aperient enemata, quite sufficient. When the symptoms run high, a general bleeding is necessary, followed by the above-mentioned milder means. When a full intermission is produced, the quinia should at once be given.

Chronic inflammations, arising as sequelæ of this disease, we have chiefly treated by leeching and counter-irritation, and with considerable success. We have also used such internal remedies as were indicated by the inflamed viscus. Enlargement and induration of the spleen or peritoneum, when recent, readily gave way to repeated blisters; but in very old cases they are exceedingly obstinate, and in many instances perhaps incurable. Abdominal dropsy, arising from an organic affection of one or more of the abdominal viscera, is a formidable disease; and the most active treatment is sometimes useless. In all these sequelæ, we have seen considerable benefit from a gentle but long-continued course of mercury.

*b. Malignant Intermittent Fever.*—Under this name authors comprehend all dangerous complications of intermittent fever. Some have classified them under three heads, namely: Cerebral, thoracic, and abdominal. Without questioning the propriety of this classification, our remarks will be confined to the first head, as our experience extends to it only.

We have observed two varieties of cerebral complications, which we may call the *comatose* and the *congestive*. The two cases which we have seen of the former variety were females, and, after a short chill, were characterized by a peculiar coma, very much like that of catalepsy; the face was pallid, and of a marble-like hue, the eyes were closed, the muscles relaxed, and the

intellectual consciousness entirely suspended; but the pulse and natural heat were hardly affected; nor did the face or pupils indicate any active congestion of the brain. Thus, it would seem that the pathology of this comatose state is similar to, if not the same as, the coma of catalepsy and other kindred nervous affections. Both recovered; one after repeated bleedings, and the other readily gave way to assafoetida enemata.

Of the *congestive* variety we have seen three cases. One terminated fatally in less than an hour. This case was also a female. She had had one or two paroxysms of simple intermittent fever, with some symptoms of congestion. On the fatal morning, after the usual chill, she all at once became apoplectic. When called to see her (half an hour after the paroxysm had set in), the following symptoms were observed: Turgescence of the face, stertorous breathing, complete unconsciousness; small, irregular, and very frequent pulse; indications of pain on pressing the epigastrium, and coldness of the extremities. Hot cloths were at once applied to the epigastrium, and to the extremities, and before anything else was resorted to, death terminated the scene.

We took notes of the second case, and they are now presented just as they were then taken:—

*July 30th*, 10 A. M. Saw ———, who presented the following symptoms: Unconscious, constantly muttering unintelligible words, tonic spasm of the upper extremities, iris sensitive and rather contracted, pulse hard and frequent, moans on pressing the upper part of the abdomen, bowels regular. On inquiry, was told he had these symptoms on the day before in a slight degree, preceded by a chill, and ending with free perspiration on the morning of this day. The symptoms of this paroxysm were also preceded by a chill.

Apply cups to nuchæ, twenty leeches to epigastrium, ice to shaven head, and strong sinapisms to feet. By sunset he perspired freely, and all the morbid symptoms vanished.

*31st*. By mistake no quinia was given. After a chill, early in the day, all the former symptoms returned.

Apply ice to head, a blister between the shoulders, two on the lower part of the legs, and sinapisms to inner part of the thighs. He began to perspire early, and before sunset the fever abated.

Take at once 3 grs. sulph. quinia, and repeat every hour until three doses have been taken.

*August 1*. Has had a slight paroxysm late at night, which terminated as usual with free perspiration. Repeat quinia.

*4th*. No more paroxysms—quite well.

Of the third case, we regret to say that no notes were taken. But we distinctly remember, that the paroxysms followed each other so closely that we had no intermission for administering the quinia; and, in spite of all our efforts to relieve the internal congestion, the patient died. We may remark of this case, by the way, that there seemed to be congestion of the abdomen as well as of the brain and its membranes.

*Treatment*.—Our experience in this variety of intermittent fever is so

limited, that the few observations which will follow must be rather theoretical. Especially is this the case, as we have not had the privilege of *post-mortem* examination in the fatal cases.

We do not feel sure whether the pathology of the *comatose* variety be a mild congestion of the brain, or whether it be of a purely nervous character. The probability seems to us to be in favour of the last conjecture, but it is not impossible that the other may be true occasionally. Of course, the treatment of such a case will depend on the conclusion we arrive at, from the close study of individual instances. If symptoms of congestion be present, bleeding, general or local, revulsions, &c. will be indicated. But if we have a pallid face, natural state of the pupils, pulse and heat, we should resort to stimulants, irritants, and antispasmodics.

There can be no doubt, to our mind, that the pathology of the *congestive* variety, is a strong congestion of the brain and its membranes, with considerable effusion in fatal cases. The principles of treatment which we entertain have been fully illustrated in the case the notes of which we have before presented. To the means which were then used, we would add, general bleeding in all plethoric subjects; and where the hardness and fulness of the pulse indicated it. We cannot speak too highly of topical bleeding, of leeches behind the ear, or cupping the nuchæ, when the congestion seems to attack the brain principally; but when the epigastrium is tender on pressure, we would by all means apply a few leeches there. Revulsives should not be neglected in any case, after due depletion if necessary.

But, after all, the best service of the medical art in this disease, is to take advantage of the first intermission, and to put the system under the influence of the quinia as soon as possible, because we have found that this variety of intermittent fever does not keep regular hours. A slight degree of fever which may remain during the intermission, should not deter us from the prompt use of the great antiperiodic.

**II. Bilious Remittent Fever.**—By this term we understand a fever, of the remittent type, in which the functions of the liver are deranged to such an extent as to be a characteristic of the disease. We have not yet met a case of the remittent fever of authors, exclusively of the bilious, which we may not rightly include in the synochal fever of this country; because our fevers, of whatever kind they may be, never assume the continued type in their early stages, except in very rare and violent cases.

The period most favourable to the generation of this fever, is the same in which other fevers prevail, namely, summer and autumn.

**Symptoms.**—It is very rare that the invasion of the actual symptoms is sudden, and without a lengthy warning. Loss of appetite, bitterness of the mouth, a troublesome feeling in the stomach, and general languor, in most cases precede the fever for some time. These are aggravated and then succeeded by flushes of cold and heat alternately, or by a regular chill, after which

fever sets in with all its usual symptoms. This fever, however, is characterized by an irritable stomach, nausea, vomiting of healthy or vitiated bile, bitter mouth, whitish or yellowish tongue, etc. Frequently, there is pain on pressing the epigastrium and right hypochondrium, or it may exist spontaneously, sometimes extending to the right shoulder. The state of the bowels is variable.

The character of the remission is by no means uniform. Sometimes it is incomplete and short; at others, it amounts almost to an intermission, and is quite long. This variation arises from the extent of the perspiration which always precedes, in the way of fair proportion; the more complete the perspiration, the more complete the remission, and *vice versa*.

*Causes.*—We have not been able to detect any *special* remote cause concerned in this variety of fever. It seems that all the causes which produce intermittents are the same which cause the bilious remittent form. Nor do we know whether there is anything in the nature of these causes productive of modified effects; or whether, as it has been sometimes said, the modification arises from the peculiar condition of individual cases exposed to the essentially same cause. The question in all its particulars can only be solved by a further and more accurate knowledge of the etiology of fevers.

It has been said by men of distinguished learning and experience, that warm climates abound in liver complaints much more than temperate latitudes; and that this organ, when not directly affected, sympathizes in a large number of their acute diseases. Is *heat*, then, the modifying agent of malaria in the production of bilious remittent fever? It may be; for, in several instances which fell under our observation, it was evident that too much exposure to the rays of the sun had a great share in bringing on the disease.

To the exciting causes which were mentioned in a former part of this article, we may add exposure to the influence of solar heat, and of cold and damp nights, washing with cold water during a general perspiration, or otherwise checking the cutaneous secretion.

*Treatment.*—During the early stages of this fever, a general bloodletting is the principal means for fulfilling the first indication, namely, to procure a full intermission. After a moderate bleeding, the symptoms often give way to a general and free perspiration. A second is occasionally required by the return of all the former symptoms. Of course, a due regard should be had to the pulse in all cases, but it is not to be implicitly followed; because, in this, as in other kinds of fever, it is not always uniform. More consideration should be given to the symptoms, circumstances, and particular contingencies of the case. But to produce such a favourable crisis by general bloodletting, it should be restricted commonly to the first few days of the fever.

In very mild cases, or where venesection is contra-indicated, topical bleeding by leeches from the epigastric and hepatic regions will be sufficient. Often, however, this will have to be repeated before we can obtain a full intermission. But topical bleeding is not confined to these mild cases; it serves

a most important service where general bloodletting is demanded, and after it has been performed. When this operation has not subdued the fever or the gastric irritability, we have often seen the application of twenty leeches at once produce the desired result.

The state of the bowels is not to be neglected. When they are costive, they should be gently evacuated by emollient or aperient enemata. Of the former, we have been in the habit of prescribing a decoction of malva with a little common oil and salt; and it is very seldom that one or two such enemata do not bring away a large quantity of fecal matter. If, however, these do not operate, or a stronger action is desired, instead of common salt we have put in the decoction an ounce or two of Epsom salts—but always with the precaution of mixing it in half the usual quantity of common clyster, lest the whole be ejected before the salts shall have operated. We have found this way of administering salts a good substitute for the use of purgatives by the mouth. By sad experience we have learned that purgatives are quite inadmissible in all our fevers, with the exception, perhaps, of a few cases. When the stomach does not reject them, they almost invariably increase the gastric irritability, and with it the fever. During convalescence, however, a slight headache will often give way to a dose of castor oil, which we have found to be the least irritating of that class of medicines.

In all cases where the gastric irritability was not very great, we have used small doses of calomel and ipecac. as an alterative and diaphoretic; but we have never pushed the calomel so far as to produce ptialism. A gentle and continued diaphoresis was the result of this combination generally, which did a great deal towards subduing the febrile symptoms.

As long as the patient is feverish, we always direct him to drink some *ptisan* instead of common water. If the tongue be very dry, we recommend some mucilaginous drink with a little ice in it; but when it is moist, we have seen greater benefit from the use of iced acidulated drinks. Infusion of tamarinds may be allowed if grateful to the patient, but when the stomach is very much irritated, it should be very weak.

Under these means, a full intermission is generally produced. If the symptoms show any tendency to return, the quinia should be given, but we have not found it necessary in many instances.

This, in brief, is the treatment we have used in those cases which it was our lot to meet. We have not seen the severe or fatal cases, which are said to be accompanied with cerebral complications, and which undoubtedly require more energetic treatment.

III. *Synochal Fever.*—Under this term we comprehend most of the varieties of continued fever, as the synocha, synochus, and typhus of authors. The error, if it be one, of reducing these varieties into one head, has arisen from the repeated observation that their diagnostical symptoms do not appear either in the initial or middle stages of fever, and their appearance in the

last leads us to suspect that they are but various modes in which one disease terminates.

It may be a matter of surprise to a great many that we do not propose to consider typhus as a peculiar and distinct variety of continued fever. The fact is, we have never seen a pure case of this kind, characterized from the beginning by typhoid symptoms. We have seen many cases of synochal fever *terminate* in the worst symptoms of typhus, but we do not remember one which began in this way. Others, however, practising in this country, have told us that they have met it occasionally in its purest form. It is not impossible that, when it prevails, it may be epidemical.

Another variety of fever is also included here, which others may suppose demands a separate and distinct consideration. We allude to the remittent fever, which is not of a bilious nature. The reason why this is included is, that our synochal fever never assumes the continued type at once, but continues to be in some sort a remittent until a considerable time has elapsed from its invasion. There are exceptions to this statement, but they are rare, and cannot claim more consideration than what is due to exceptions in general.

*Symptoms.*—Like the bilious remittent, it is very rare that synochal fever sets in at once. Most commonly, the premonitory symptoms are protracted for some days; and it is a question, not altogether unimportant, whether these symptoms form a part in the chain of morbid phenomena produced by the febrile cause, or whether they should be considered as abnormal deviations acting as predisposing causes. Be this as it may, the patient feels unwell for a day or two, or more, before all the essential elements of fever appear. During the day, lassitude, yawning, fulness of the head, loss of appetite, bad taste in the mouth, &c., trouble the patient; and, in the night, restlessness, feverishness, and sometimes vomiting take place. These, with a general or epigastric uneasiness, and a feeling of soreness in the limbs, constitute the chief premonitory symptoms.

Some time or other, generally in the day, these symptoms are succeeded by a regular chill, or by slight chilliness alternating with flushes of heat, and terminating, after various degrees of length, in the actual symptoms of fever. The pulse becomes hard and frequent, sometimes full; but, in some cases, by constitution, or some other contingency, it is small. The face is flushed, the temporal arteries throb, the eyes often suffused, and the head heavy or painful. The tongue assumes various aspects; sometimes it is red, and dry, and rough; sometimes it is coated with a dirty layer of mucus, except the edges, which are red; and sometimes it is moist and almost natural. But, however the state of the tongue may be, the stomach is almost invariably irritated, as indicated by the intense thirst, tenderness on pressure, and vomiting, which are present more or less in every case. The bowels may or may not be costive, but the former state generally prevails. The urine is high coloured and sedimentitious. The skin is dry and hot, but it is very rare to



meet with the *calor mordax* of writers in the early stages. With these symptoms, there are restlessness, pain in the limbs—especially in the loins, shoulders, and knees—general or præcordial anxiety, &c.

After continuing some hours, generally somewhere between six and twenty, the urgent symptoms give way to a gentle perspiration; but, while there is an abatement of the fever, it by no means goes off entirely. The remaining febrile action may be distinctly observed in the moderate frequency of the pulse, the clammy state of the tongue, the continued, though abated thirst; in a word, we see a full *remission* of the books. The remission generally continues more or less, according to the degree of perspiration which preceded it. The extent of the perspiration is commonly regulated by the urgency of the symptoms. Sometimes, however, we see a full intermission, which either puts a stop to the fever permanently, or it may be succeeded by another paroxysm, which assumes the remittent type.

The remission is succeeded by a renewal of all the former symptoms, and they by a remission, and so on. We may remark respecting these remissions, that, as the case goes on favourably or unfavourably, they will be longer and more frequent, or the contrary. If the case terminates favourably, the remissions will become more marked as they succeed every following paroxysm, until a full intermission, or permanent stop of the fever, is produced. And, on the other hand, if it goes on unfavourably, the remissions will become feebler and feebler, until the fever becomes confirmed in the continued type.

When the case terminates fatally, the patient becomes very restless, the pulse small and irregular, the tongue brown or blackish, and very dry, the functions of the brain are disturbed, and the muttering delirium and subsultus of typhus set in. These symptoms become worse, and death, by coma or a half comatose state, terminates the scene.

*Causes.*—All the causes which produce intermittents and remittents are capable of producing this variety of fever. In malarious districts, synochal fever is a very common disease; and, in such as are remarkably so, it assumes a very dangerous form, which is often fatal to those who have not been acclimated to noxious effluvia. In thickly-populated cities and towns, which happen to be comparatively free from marsh miasm and filthy effluvia, it seems that the impure atmosphere of streets swarming with animal life, and badly-ventilated, either from the closeness of the buildings, or from a want of strong currents of wind, has no small influence in producing the synochal fever of these localities. We may add another, namely: the action of solar heat which is called *insolation*, or *stroke of the sun*. Nor is this to be wondered at, since our summer heat is very great, ranging from 75° to 95° Fahr., and that in the shade, and for six months in the year. This, with the very imperfect provision which the Arab dress makes for protecting the head, renders such as are exposed very liable to insolation and fever. Especially is this true of children, whose peculiar state of nervous organs makes them very susceptible

to such influences, and who are, nevertheless, allowed very frequently to roam in the sun.

*Treatment*.—General bloodletting, the utility and safety of which in fever are so much questioned in other countries, stands foremost among the beneficial and safe remedies which we have observed and tried in almost innumerable instances. And this is the testimony not only of those who have visited warm climates, but it seems to be also the opinion of all those who have expressed their judgment *à priori*. But, while its utility has so much authority, no one can doubt that it may be abused, and thus may be productive of very serious consequences.

Very often, not long after the actual invasion of the febrile symptoms, nature relieves the patient by a full perspiration, and, as human sagacity cannot foresee when such a favourable turn will take place, and when not, we have generally left the case, for the first few hours, to nature, unless its violence called at once for prompt and vigorous measures. When the desired result did not come on after the lapse of twelve hours or more, according to the urgency of the symptoms, we have had the patient bled in the sitting posture to *syncope*, or until a full inspiration could be produced with perfect ease. The result will be, almost invariably, a sensible mitigation of all the symptoms, and, not unfrequently, a free and critical perspiration. When this latter takes place, and the febrile symptoms are completely subdued, the only sure way of preventing a return of all the former symptoms, is the prompt administration of quinia. When the symptoms are simply mitigated, very commonly they soon run high again, and a second bleeding will be frequently necessary. There are very few cases which cannot bear this repetition, or which will not be permanently benefited by it. A third bleeding is sometimes demanded, but great caution will be necessary before deciding upon having it performed. Of course, the sex, age, constitution, pulse, &c., should be considered in all cases where bleeding is proposed, but in third bleedings doubly so.

But bleeding should be limited to the first few days of the disease, not only because it is in the early periods that the fever is very high, but also because the system is exhausted during the middle and last stages of fever, and, therefore, cannot bear the loss of blood. Cases have occurred under our observation where an ill-timed bleeding has been fatal, or, at least, has hurried the fatal termination.

When general bloodletting has only mitigated the febrile symptoms, or when they were slight from the beginning, and a bleeding is deemed unnecessary, we have seen great benefit from the application of leeches to the abdomen. We have been astonished, sometimes, by the sudden relief which was experienced by topical bleeding; and we can remember many critical cases which recovered mainly by this means. The leeches should be applied to that part of the abdomen which feels tender on pressure. Sometimes there is no tenderness at all, but the red tongue, the thirst, and the vomiting have

directed us to apply the leeches to the epigastrium, and with the most gratifying result.

If general bloodletting has not been carried to a great extent, topical bleeding may be repeated several times, until the fever is subdued, or until no more blood can be drawn with safety to the patient. We have observed that, when a sufficient quantity of blood has been lost, and the symptoms remained unabated, the case generally terminated fatally.

But, while we depend on bloodletting in the early stages of synöchal fever, as the principal and most potent means for subduing it, we do not neglect the use of other means, very important in their way. Of these, we have much faith in suitable or medicated drinks, and laxative enemata.

If the thirst be great, and the tongue not dry, we have found cold and slightly-acidulated drinks, not only very agreeable to the patient, but also of marked benefit. Lemon juice, tartaric acid, and tamarinds furnish materials for such drinks, among which the taste of the patient may be consulted. We frequently add a small quantity of the sweet spirits of nitre, and a favourite prescription of ours in such cases is the following:—

Acid. tartaric. ℥j; sacchar. alb. ℥j; aquæ fontanæ ℔iiss. Solve et adde, spt. æther. nitros. ℥ij. A small portion to be taken every now and then.

But, when the tongue is dry, and its papillæ rough and red or brownish, we have observed mucilaginous drinks to be much more apt to allay the thirst and moisten the mouth. Quince-seed tea, or barley-water serves the purpose. Sometimes we have united acidulated with mucilaginous drinks, and, perhaps, not without benefit. When ice is to be had, we always allow the patient to take it *ad libitum*, but continuedly, so as not to suffer a reaction to take place; but, during perspiration, or when the chest is affected, we prohibit its use. After all, nothing will quench the thirst so readily and permanently as the application of a few leeches to the epigastric region.

We have always inquired after the state of the bowels; and, when they were confined, an aperient enema was directed, which rarely fails of exciting a moderate evacuation. If the bowels had been long inactive, or when the first clyster was not active enough, it was repeated once or twice every day. If a stronger action is desired, one ounce or more of Epsom salts may be dissolved in half the quantity of a common clyster, and then administered. If there was diarrhœa, we have usually ordered emollient or mucilaginous enemata, according to the frequency and character of the discharges. When it is accompanied by pain, we add a small quantity of laudanum.

It may surprise some of our readers that we do not employ more energetic measures for evacuating the intestines of what is considered by some as a "morbific cause." We are fully aware that "active aperients" are the *sine quâ non* of many highly respectable authors and practitioners; but we must say, with all deference to their views, that our *fevers cannot bear them*. The irritation or inflammation of the gastro-intestinal mucous membrane, which seems always to accompany our fevers, whether it be secondary

or primary in the chain of febrile phenomena, cannot fail to be aggravated by purgatives or any other class of medicines which is prohibited in gastro-enteritis, and, in its turn, aggravate the fever. However orthodox the use of calomel and jalap may be, in my hands, it has rarely failed to make much mischief in this disease. "We believe," says a distinguished author, "that the disciples of Broussais may have carried the antiphlogistic plan too far in fever; but, if they have killed their thousands, the followers of Brown and Hamilton have killed their ten thousands. . . . What is the common treatment of fever? A bottle of wine on the one hand, and a bottle of purging medicine on the other; and this for all fevers and all stages of the fever! We do not wish to be understood as decriing the use of tonics or purgatives in all cases, but we do protest, in the name of common sense and humanity, against their indiscriminate employment. *The experience derived from the treatment of several thousand cases of fever has convinced us of this fact: that in the treatment of this disease, particularly in its early periods, we shall be more certain of advantage from leeching the abdomen, cold drinks, and emollient enemata, than any other treatment whatsoever.*" (*Cyclopædia of Practical Medicine*, Amer. edition, vol. ii. p. 323.)

We may say the same thing respecting the use of tartar emetic as a sedative in fevers; for the same principle that forbids the use of purgatives, forbids it also. We have used it in one case, and seen it used in two, and the result in the three cases was manifestly injurious: a morbid and obstinate diarrhœa had wellnigh destroyed the life of the three patients. We will not pretend to say that this is competent experience to exclude this article entirely from the list of febrifuge medicines; but, as long as we have reason to remain attached to our idea of the pathology of our fevers, and as long as we remember the result which we have seen from its use, we shall let it alone, and recommend to others, who are practising in this country, to do the same.

To encourage perspiration, we are in the habit of giving small doses of ipecac. and sweet spts. of nitre, and, perhaps, with advantage. When the stomach and intestines did not seem to be much inflamed, we have united to the ipecac. small doses of calomel. A gentle and continued diaphoresis is generally the result. Another expedient which we are in the habit of using is strongly-sinapised pediluvia. By the gentle stimulation which they seem to exercise on the cutaneous vessels, they are sometimes followed by a critical perspiration. Nor is this their only use; for, by determining the blood to the lower extremities, they generally relieve, for a time, headaches and other local pains and congestions. But we have always been careful not to use them when the febrile excitement was high.

Instead of cold affusion and sponging—which have been so much recommended by British physicians, but which the prejudices of the natives will not permit—we have found cooling applications to the abdomen, when it is preternaturally hot, of some service, especially in children. Cold poultices of starch and vinegar, or cloths dipped in diluted vinegar, renewed often, is the

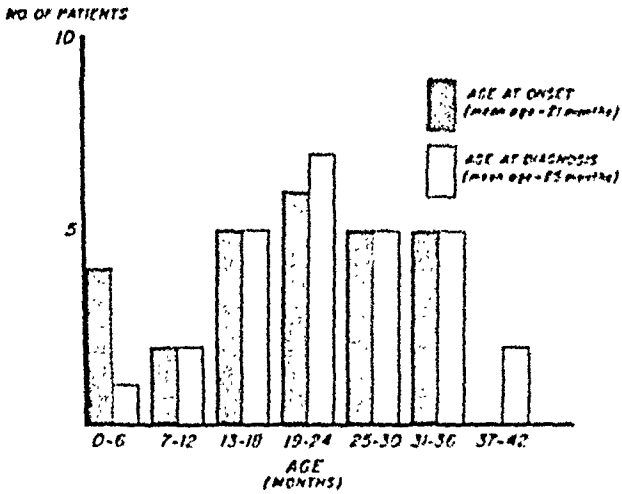


Fig. 6.—Age at onset and diagnosis of hypervitaminosis A in the infant-toddler age group. Note that six children (22%) had the onset before one year of age. There is little delay between onset and diagnosis in this age group (see also fig. 8).

in only one was it made before 6 months. While age does not serve in the differential diagnosis of these two diseases, there are other differences which separate the two. In Caffey's disease there is often fever, an elevated white blood cell count, and a rapid erythrocyte sedimentation rate. The distribution of bone lesions is another important differential point. The mandible, which is commonly a site of involvement in infantile cortical hyperostosis, has never been involved in a reported case of hypervitaminosis A. Cutaneous manifestations, which are common in vitamin A poisoning, are not an accompaniment of Caffey's disease. Finally, the diagnosis of hypervita-

minosis A is established by the high vitamin A level in the serum.

The interval between initiation of the toxic dose and the onset of symptoms is shown in Figure 7. In more than half of the infants the interval was between 1 and 12 months. In only 2 of the total of 36 cases did symptoms occur in less than one month after the initiation of the high dose. Of interest, but not of significance, because of the small numbers in each sample, the average interval in both infants and adults from the onset of the toxic dose to symptoms was 10 months. It is clear that there is a latent period between the onset of high-dose therapy and the emergence of toxic symptoms. Many factors may be responsible for this delay, including individual variations in absorption, utilization, and excretion. One factor that appears established is that the liver must become saturated with vitamin A before symptoms arise. The excessive accumulation of vitamin A in the liver is believed to be responsible for the hepatomegaly which has been observed in more than half of the reported cases.

Once the symptoms have arisen, the interval before the diagnosis is established varies in the different age groups (Fig. 8). In the infant and toddler groups the diagnosis was established in all except 1 child

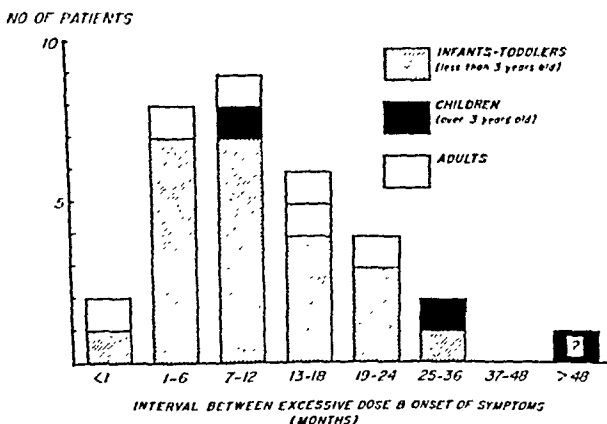


Fig. 7.—In all age groups there is a definite latent period between the initiation of excessive vitamin A intake and the emergence of symptoms of intoxication. The average interval is 10 months.

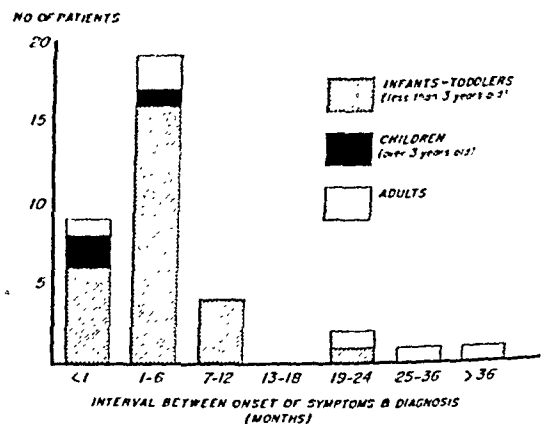
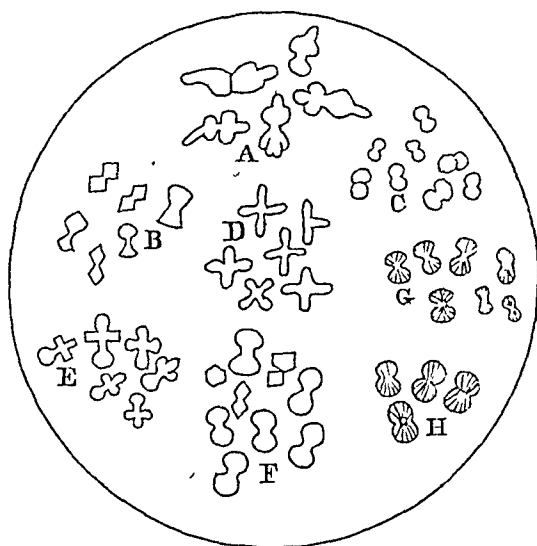


Fig. 8.—The interval between the onset of symptoms and diagnosis of hypervitaminosis A. In most infants (and all three older children) the diagnosis was made within six months of the onset of symptoms. In half of the adult group there was considerable delay before the diagnosis was considered.

*Journal of the Medical Sciences* for July, 1850, p. 23, believes them to consist of uric acid.

Later discoveries have rendered it certain that this crystalline deposit is not peculiar to any one constituent of the urine. Dr. Hassall, in the *Lancet*, vol. ii. 1849, p. 608, calls attention to an undescribed crystalline salt, having a dumb-bell appearance, which he has classed as oxalate of soda, with urea in combination, and in the same *Journal*, vol. i. 1850, p. 177, speaks of the same form of crystal as frequently consisting of sulphuric acid, in combination with soda or potash. In the elegant work of Robin and Verdeil, carbonate of lime is assigned a dumb-bell form, and I am fortunate enough to have in my possession, through the kindness of Professor Bailey, of West Point, a beautiful specimen of this salt from the urine of the horse, many of the crystals of which possess the form under consideration. Several of these are represented in the cut at H.



A, B, C. Natural crystals of urea, chloride of sodium, of Dumb-bell formation.

D, E, F. Artificial crystals of urea, chloride of sodium.

G. Dumb-bell crystals, from the action of sulphuric acid on lithic acid.

H. Dumb-bell crystals of carbonate of lime, from the urine of the horse.

All the figures are drawn with the camera lucida, and magnified 320 diameters.

I desire now, however, to call attention to several forms of dumb-bell crystallization, which I am not aware of having been alluded to by any writer on the subject. During an extended series of microscopical investigations of the urine, I have been struck with the frequent occurrence of dumb-bell crystals, differing in appearance from those of oxalate or oxalurate of lime, or those of uric acid, as described by Dr. Frick. They are thin and transparent; are perfectly soluble in water, and have no action whatever on polarized light. They can often be obtained from the slow evaporation of a drop of urine on a piece of glass, and when viewed with a  $\frac{1}{4}$  inch objective, appear as represented by groups A, B, and C, in the engraving.

in these situations larger doses, up to 20,000 units daily, are indicated. Vitamin A administration in the recommended dosage will prevent the clinical manifestations of hypovitaminosis A, which include night blindness, xerophthalmia, and keratomalacia and, less importantly, skin changes, including follicular hyperkeratosis. As mentioned previously, increased intracranial pressure may also occur with hypovitaminosis A in infancy.

The indications for vitamin A administration in dermatologic diseases are not established. Some texts do not mention the use of vitamin A, while others suggest its use in conditions where there is excessive keratinization, either diffuse, as in ichthyosis, or limited to the follicular system, as in acne vulgaris. For example, one text states "the dermatologic dose of vitamin A is 100,000 units per day, although in some disorders up to 300,000 units per day are required and treatment must be continued for a period of months to achieve the desired effect"<sup>40</sup> In general, dermatologic texts provide either very scanty or no information to the reader regarding vitamin A intoxication.<sup>41-43</sup> One commonly used textbook of medicine states that ". . . doses [of vitamin A] up to 300,000 units per day for a number of months have not produced detectable harmful effects. . . ." <sup>45</sup> The implication that such dosages are without risk is not consistent with the facts presented here. It is recognized that vitamin A in large doses is often prescribed by dermatologists. The extremely low incidence of chronic intoxication indicates that most persons can tolerate such doses. However, this does not justify its use, particularly when its value in skin disease is questionable. If prescribed for a "clinical trial," present evidence suggests that the dose should not exceed 50,000 units daily for a period of not more than two months.

Finally, in terms of better understanding the epidemiology of vitamin A intoxication, it is of interest to examine the reported cases for responsibility of prescribing the

toxic dose. In 25 of the 27 cases among infants the family was responsible. In these situations the mother usually gave more than the prescribed dose because "it would do more good." In two of the infants the responsibility appeared to be with the physician, who in one instance prescribed high doses of vitamins for the diet and in the other, because of a large fontanel. Examination of the nine cases in older children and adults revealed that in seven of the nine cases the intoxication must be considered iatrogenic. In all of the older children vitamin A had been prescribed for skin conditions. This was also true in four of the six adults. In the present case some responsibility must also be placed with the patients, who did not discontinue therapy when this was recommended, although there was clear evidence of vitamin A intoxication before that time. In one adult advertising claims must be held as the responsible factor. Coupled with the claims of irresponsible firms are the facts that vitamin A in large amounts may be purchased without prescription over the druggists' counter or by mail, and, of even greater importance, I was unable to find indication on any label of vitamin A preparations that toxicity with large doses or prolonged administration might occur.

### Summary

A case of chronic hypervitaminosis A in a 14-year-old girl is presented, and the English literature, comprising 36 cases in infants and toddlers, children, and adults, is reviewed.

The symptoms, signs, and laboratory findings are discussed. In general, all age groups share common symptoms and signs. X-ray changes of the long bones occurred in 100% of infants and toddlers but in only one of nine persons in the older groups. Central nervous system symptoms and signs due to increased intracranial pressure occurred in 20% of the total group.

All manifestations of hypervitaminosis A subside promptly following withdrawal of vitamin A. No sequelae were observed.

bell form unless in excess, or unless urea be deficient. All the specimens of this deposit having the shape mentioned, were obtained from patients affected with inflammatory diseases, or who had recently been intoxicated. The results are as yet too meagre to afford a basis for a theory, and my only object in at all alluding to the circumstance at present, is to enlist the attention of observers in the matter. It is possible that the salt food forming a part of the ration issued to troops, may be the cause of the comparatively frequent number of instances of this formation coming under my observation.

ART. VII.—*The Relations of the Pulse to certain states of Respiration.*

By S. WEIR MITCHELL, M. D.

THE ingenuity of modern research has left few points unstudied in the history of the pulse. Amidst all this ardent inquiry, the relative activity of the heart and the lungs, have been duly regarded by the numerous inquirers to whom this branch of our science is so deeply in debt. In reviewing a subject of such general interest, it is proper to state, with brevity, the opinions of former writers, in order that no misunderstanding may exist as to the extent and nature of the views which I propose to offer in the following essay.

The mere numerical relations of respiration to the pulse, and conversely, of the pulse to respiration, are so well known as to demand no further notice here. Increased activity in the one, commonly entails a like state in the other. To this general law there is a very remarkable exception, whose insertion at this point is justified by its singular novelty and interest.

The substance of the following observations is taken from an unpublished essay upon the state usually known as the "mesmeric sleep," an abstract of which was read by its author, Prof. J. K. Mitchell, before the Philadelphia College of Physicians, in the year 1839.

Thirty-seven cases of "animal induction," or induced somnambulism, were studied with reference to the relations of the pulse and respiration. The result is briefly stated in the following summary of a very elaborate table:—

Pulse before sleep.	Pulse of sleep.	Respiration before sleep.	Respiration during sleep.
Average: 81.7	Average: 105.	Average: 19.04	Average: 19.68
Difference: 23.3		Difference: 0.64	

The pulse of the mesmeric state was in every instance greater than that of



the waking condition; the least excess being 8, the greatest 48. If one extraordinary case be omitted from the table, the average proportion of the numbers of respirations would be as 18.9 in the waking condition to 18 in the sleep.

While, therefore, the pulse always quickens, the respiration either falls absolutely below the normal waking standard, or undergoes no change. The proportion of the pulse to the respiratory movements was four to one in the waking condition, and nearly five to one in the sleep; an excess of twenty-five per cent. for the mesmeric slumber.

We have long known the effect of inspiration and expiration, upon the blood in the vessels near the thorax, inspiration promoting the flow of venous blood to the right heart, and expiration, in some degree, retarding it.

On the other hand, we have learned but little as to the separate influence of expiration and inspiration upon the heart's action, and still less as to the causes, which, by primarily affecting one or the other heart, finally modify the entire motion of that important organ. Incidental allusions to these points are found scattered through the works of Kay, Alison, John Reid, and Allen Thomson. No one has attempted to fill this gap completely; and much that has been said or done, is wanting in precision, and often inexact as to facts.

Dr. John Reid, of Edinburgh, has pointed out some of these neglected phenomena with more distinctness than any other writer. During many of his vivisections, he remarked that the pulse quickened during laborious expiration, and became slow, for a short period, on the like state of inspiration. His explanation is simple and lucid, and is further sustained by my own researches.

I regret that a necessary limitation as to space, deprives me of the power of stating more amply the views and observations of the writers to whom I have alluded. Their works contain, however, very little positive knowledge, and the reader may therefore be simply referred to their essays upon the pulse, respiration, and asphyxia.

With this short preface, I propose to examine, in the course of this paper, the effect of extreme states of respiration upon the pulse of man.

The fullest recognition of the phenomena in question has occurred from year to year, in the lectures of the Professor of the Theory and Practice of Medicine in the Jefferson Medical College, Philadelphia, where my attention was first called to them.

Prior to a course of systematic observation, I endeavoured to ascertain the effect, upon the pulse, of mental attention to the heart's action. I observed in this condition a slight acceleration of the pulse, but not enough to interfere materially with my results. Prolonged direction of the mind to trains of laborious thought, usually renders the pulse numerically less active; so that, after several hours of intense mental action, I have found that the pulse falls very considerably below its usual number.

The facts, to which I would now desire to call attention, are easily brought within range of the reader's personal experience.

Let a finger be placed on the pulse, and let the chest be held fixed in full inspiration, the pulse will be observed to become less frequent.

Numerous individual exceptions occur, and, in a few cases, negative or exceptional results are obtained. On the other hand, the observer is sometimes alarmed by the long pause between successive pulsations. In one or two cases, I have been forced, on this account, to suspend altogether any further research. Again: let the chest be fixed in a state of extreme expiration, and the pulse will almost invariably quicken.

Persons who are susceptible of these changes, will thus observe that there is a point, midway between these extreme conditions of respiration, at which fixation of the chest fails to affect the pulse. If, starting from this point as the zero of influence, the lungs are slowly inflated to fulness, the pulse will usually beat less and less rapidly. In like manner, during the movement of expiration, the heart quickens its pulsations, and sometimes they suddenly increase to a still greater extent, when a state of complete expiration is attained.<sup>1</sup> In a few rare cases, these changes may be studied in the thoracic movements of those whose natural respiration is excessively long and laborious.

For brevity and convenience, I shall term the two pulses induced by extreme respiratory conditions, respectively, the inspiratory and the expiratory pulses.

Before attempting any explanation of the facts in question, I would call attention to the following brief tabular statement of the changes which *usually* occur under given respiratory states.

LENGTHENED RESPIRATORY MOVEMENTS.

Movement of inspiration: Pulse slow.	Movement of expiration: Pulse rapid.
Fixed inspiration: Pulse slow.	Fixed expiration: Pulse rapid.

The evidence upon which the above statements are founded was derived from attentive examinations of adults, averaging twenty years of age, and seated in easy postures. For most of them, I am scientifically responsible; for others, I have to thank the considerate kindness of medical friends. I need scarcely add, that every proper precaution against error was carefully taken.

I have arranged some of these results in the following table. Forty cases

<sup>1</sup> As, in using the spirometer, it is necessary to learn *how to breathe* before successful results are attained.

electrocardiogram was consistent with right auricular hypertrophy, with peaking of P waves in Leads II,  $aV_F$  and  $V_1$ . An electroencephalogram revealed a poorly organized pattern, with frequent biphasic spikes and sharp waves occurring throughout the tracing. Infrequent 14-per-second activity occurred with light sleep. No amplitude asymmetry or evidence of a focus was noted.

The patient was treated with digitalis, diuretics, and antibiotics. The edema abated, but the temperature continued to be elevated. The child died on the seventh hospital day.

**Necropsy Summary.**—At autopsy the following measurements were recorded: body weight, 13.7 kg.; crown-heel length, 97.9 cm.; pubis-heel length, 42.0 cm., and arm length, 29.0 cm. The head, which was markedly scaphocephalic, with prominent supraorbital ridges, had a circumference of 59.1 cm. (Fig. 2). The extremities and trunk



Fig. 2 (Case 1).—Negro child with coarse features, prominent supraorbital ridges, and scaphocephalic skull.

were short, and a dorsolumbar kyphosis was present. The hands were claw-like. The pericardial cavity contained 85 ml. of straw-colored fluid. The heart weighed 135 gm. (normal, 73 gm.). The epicardium and endocardium appeared to be slightly thicker than normal. The myocardium was firm and hypertrophied, the left and right ventricular walls averaging 1.1 cm. and 0.6 cm., respectively. A gray verrucal nodule measuring 0.2 cm. was noted on the auricular surface of the posterior cusp of the mitral valve. The walls of the coronary arteries were thickened. The liver weighed 960 gm. (normal, 516 gm.). Its surface was smooth and brownish-red, and on section the tissue was yellowish-tan.

The spleen was three times normal size, weighed 110.3 gm., was firm and reddish purple, and had prominence of the follicles. There was hypertrophy of the submucosal lymphoid tissue of the gastrointestinal tract. The sella turcica was

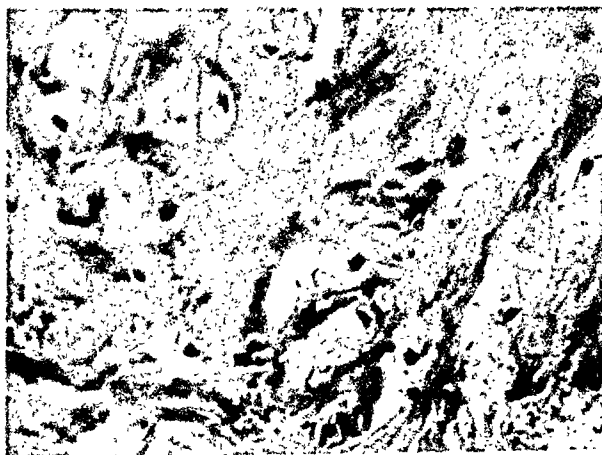


Fig. 3.—Myocardium with infiltration of large vacuolated cells and collagen. Hematoxylin and eosin;  $\times 475$ .

markedly enlarged, but the pituitary gland was normal in size. The brain weighed 1490 gm. (normal, 1191 gm.) and was increased in its anteroposterior diameter. The meninges over the cerebral cortex were cloudy. Coronal section disclosed irregularity in the diameter of the cortex and subcortical white matter. There were areas of cavitation in the white matter of the occipital lobe. The lateral and third ventricles were twice the normal size.

**Microscopic Examination.**—The heart showed hypertrophy of the myocardial fibers, with focal swelling, loss of striations, pallor, and vacuolation. The most significant changes consisted of the proliferation of collagen and infiltration of large pale mononuclear cells (Fig. 3). The collagen was increased in the subepicardium and subendocardium, and strands of collagen from the latter penetrated the myocardium. These changes were more marked in the left side of the heart. There was also focal increase of collagen around the blood vessels. Pale oval cells infiltrated the areas of increased collagen. The cytoplasm appeared as a delicate reticular network and contained a few

Fig. 4.—Coronary artery with marked intimal thickening. Hematoxylin and eosin;  $\times 20$ .



and that of fixed inspiration. These numbers range from 0 to 46 pulsations per minute.

In like manner, while column sixth gives us the pulse-numbers of expiratory fixation, column seventh exhibits the various amounts by which they exceed the normal pulse of ordinary respiration. Thus, in expiratory fixation, the pulse gained, in certain cases, 24, 36, 35, 33 per minute. In others, the changes were but slight; as, 1, 2, 3 beats only.

In column eighth, will be found the numbers of extreme difference from fixed inspiration to fixed expiration. It is here that we best observe, and most clearly appreciate the nature and extent of the changes in question. No one of the numbers in this column falls below 11, and one attains the limit of 46. In tables of this nature, averages are of minor value; I have, however, stated them at the foot of each column in this and the succeeding tables.

In forty persons, the average normal pulse was 80.5. In fixed inspiration, it fell to 70.15; in fixed expiration, it rose to 93; giving, as the average of extreme difference, 23 per minute.

I have made few records in diseased conditions, yet some of these were very striking; as when, in a case of hypertrophied heart, the extreme of change in the two induced pulses exceeded fifty beats per minute.

In order to learn the effect of prolonging these respiratory states, I selected two cases, those of Nos. 1 and 3, Table I. Both have the power of holding the breath during a full minute of fixed inspiration. The pulse was noted during successive quarter minutes.

CASE 1—TABLE I.

1st quarter.	2d quarter.	3d quarter.
13	14	13
17	17	18
16	18	20
11	13	18
12	13	12

CASE 3—TABLE I.

1st quarter.	2d quarter.	3d quarter.
12	13	17
13	13	14
11	12	14
12	14	13

The expiratory pulse gave similar results, no great change taking place in either case. For a brief period after fixed inspiration, especially in susceptible cases, the pulse rose a few beats, as if by way of compensation. Thus:—

Natural pulse.	Inspiratory pulse.	Natural pulse of the succeeding minute.
66	48	76
66	44	72
65	44	69
64	48	77

The influence exerted by the amount or degree of inspiratory fulness was also tested. The results are expressed in the following table:—

TABLE III.

*A Table of the Diurnal Variations of the Pulse of Case 21, Table I.<sup>1</sup>*

Time.	Condition.	Natural pulse.	Inspiratory pulse.	Inspiratory fall.	Expiratory pulse.	Expiratory rise.	Extreme of difference.
2 A. M.	Fasting	72	60	12	80	8	20
12 A. M.	"	68	60	8	83	15	23
1 A. M.	"	63	56	7	80	17	24
4 A. M.	"	71	63	8	79	8	16
11 P. M.	"	72	61	11	79	7	18
12 M.	"	69	58	11	76	7	18
1 A. M.	"	70	60	10	79	9	19
3 P. M.	Digesting	70	62	8	84	14	22
3 P. M.	"	72	64	8	79	7	15

I have not seen that the varying amount of change in the induced pulses of different men, had any appreciable connection with the extent of their vital capacities. There are short men, of great vital capacities, whose pulses remain unchanged during fixed inspiration, and I have met with tall men of uncommonly small vital capacity, whose pulses fell unusually in that state of inspiration. Certain remarkable facts may be deduced from the last two tables; and, as they have a bearing upon the explanation of the induced pulses, I shall briefly refer to them before proceeding further.

Besides the remote influences which affect the heart through its nerves, it is liable to the more sudden and immediate stimulation of the afflux of large amounts of blood, as in muscular exertion. It also seems probable to me that the heart may be mechanically stimulated, during life, by violent motion, and in other ways to be explained in future.

Owing to these numerous agencies, the heart is "set," as it were, to a certain beat, or number of pulses. The force and frequency of these express, at any one time, the temporary necessities of the body. We shall then observe that any new stimulus will act on the heart, with a power greatly modified by the existing conditions of that organ, and by the demands upon its activity. I believe that this is also true of the effects of depressing agencies. Thus, in Table II. the lung capacity remains the same throughout, and the same amount of air is taken in during fixed inspiration. Yet all the pulses do not suffer an equal amount of depression during inspiratory fixation. A very low pulse, as that of prolonged mental labour, falls but little. The pulse of high number can sink no lower than the previous systemic regulation will permit. This is admirably illustrated by the effects of digitalis. When a patient, who is fully under its influence, stands up, there are new demands upon the heart's activity, and accordingly, when in this position, the pulse fails to show the influence of the remedy. If, now, the recumbent posture be assumed, the number of heart beats falls to a disproportionate extent. It thus happens, that in every pulse, we may observe the existence

<sup>1</sup> The observations are by Dr. G. R. Morehouse.

of a certain numerical limit." This varies in individual cases. That of Case 3, Table I. is very ample, and reaches from 44 to 120. Consistently with health, it does not fall lower than 44, while only a most unusual stimulus can raise it above 120. It may also be observed that the boundary is more definite in the direction of depression, than of stimulation.

Accurate and prolonged study of any one case, will acquaint us with the extent and limitation of this pulse range. The rapidity and ease with which the pulse alters within these boundaries, is fixed and regulated by numerous circumstances, such as primitive construction, habit, and temperament.

The points thus briefly dismissed, are matters of daily practical recognition, yet they do not seem to have received sufficient consideration in the pages of medical science. Perhaps tables of the pulse range would be of greater value than the pulse tables, as usually constructed.

After very careful study of all the phenomena, in many experiments and vivisections, I feel disposed to refer the induced pulses of extreme respiratory states, to causes chiefly physical.

I confess to some pleasure in thus placing these interesting facts within the domain of the laws of dynamics. This pleasure is at least not lessened by the knowledge that I am indicating a new region for research, and that many of the points in question have hitherto escaped the eager reach of physiological induction.

The present state of knowledge in this direction, is best illustrated by the following quotation from a standard text-book, of the highest character;—

"The pulmonary circulation is unaffected by atmospheric pressure, and is not exposed to the influence of the pressure of muscles. The force by which it is accomplished, and the course of the blood, are alike simple." (*Kirk's and Paget's Handbook of Physiology*, p. 132, 2d Am. ed.)

I have repeatedly observed, in rabbits, the phenomena recorded by Reid, the pulse becoming slow during inspiration, and fast during expiration, when those movements were long and laborious. Animals may be forced to breathe thus, and in fact, I have sometimes noticed similar phenomena in man. They have been in part explained by Reid. He believed that, during dilatation of the lung, the flow of blood from its spongy tissue was necessarily lessened. The left heart would thus receive a smaller share of blood, and would, therefore, contract less often.

During expiration, a portion of blood, as well as the air of the lung, is expelled; this blood, moving in the tide of circulation, enters the left heart, and compels it thus to contract often enough to get rid of the overplus of fluid. Hence a more rapid pulse.

*Fixed Inspiration.*—When the lung is fixed in the state of complete expansion, new dynamical relations arise, and the pulse becomes slow.

If a number of minute elastic tubes are imbedded in, and coiled about the walls of, a caoutchouc bag, the arrangement will represent, well enough, an air-cell of the lung, and its surrounding vessels. If the bag be then inflated,

or its walls otherwise stretched, the small tubes will be lengthened and lessened in area. This may be done by inflation, or, as in the lungs, by expanding agencies, acting from without. In either case, the gum bag will be expanded, so as to affect indirectly the caliber of the small tubes.

During inspiration, air rushes into the air-vesicles with great facility. If the dilatation thus made, be excessive, the capillary vessels of the lung are stretched, and perhaps, in some cases, subjected to pressure. Circulation will be thus impeded in those most minute pulmonary vessels, which are wrapped around the air-cells. In order to test these views, I resorted to the following means. After many failures, the ingenuity of my friend, Dr. Da Costa, suggested a method by which I was enabled to procure a sheep's lung in such condition as enabled me to pass through its vessels a stream of fluid. To effect this object, we injected carbonate of soda into the pulmonary vessels of a living animal, as far as their resistance permitted; after which, the whole of the thoracic viscera were removed from the animal, and placed in a solution of the salt just mentioned.

After many failures, I thus procured a lung to which I adapted the following simple arrangements: A long glass tube, half an inch in diameter, was fitted within the mouth of the pulmonary artery; a similar tube was secured within the mouth of the pulmonary veins, or, rather, within the left auricular opening; a third short tube, with a stopcock, commanded the opening of the divided trachea.

Thus prepared, diluted serum was poured into the pulmonary artery tube. After a few moments, the lung vessels became full, and the bloody water was seen rising in the pulmonary vein tube. As this took place, I inflated the lung through the tracheal tube. Under these circumstances, the fluid fell somewhat in both tubes, and most in that of the pulmonary artery—probably, because the lung vessels on that side were most easily filled by the injection. When the inspiration became forced, and permanent, the flow of fluid through the lung became very slow, and, in some instances, ceased altogether. When the stopcock of the tracheal tube was turned, and expiration was allowed to occur, the column of fluid in the tube of the pulmonary artery, invariably fell. This it continued to do, under any, and every extreme of expiration which circumstances permitted, and until the two columns reached a level. I may state that these experiments were amply satisfactory to the gentlemen who observed them, and who aided me in their execution. The sole difficulty is in preparing the lungs so as to admit of the free passage of serum. The amount of pressure exerted by a column of serous fluid, demands also some regulating care, since the experiment is often interrupted by a burst of fluid from the vessels into the bronchi and trachea.

Not feeling quite sure that my results were fully applicable to the living body, I sought to obtain further and more satisfactory proofs of their vital reality. After several fruitless efforts to apply the hæmadynamometer within

the tide of the pulmonary circulation, I attained the desired ends in a very simple and novel manner.

I observed that the exposed lung of an animal, kept alive by artificial respiration, flushed as it shrunk in expiration. This is possibly due to the closer aggregation of the capillaries. It might also be caused, in part at least, by an actual increase in the amount of blood, which the most minute vessels contain during complete expiration. Indeed, the extreme pallor of the surface of the lung, in deep inspiration, gave some weight to this idea.

To test these inferences, I opened a rabbit, and, while artificial respiration was made, I carefully scratched through the pleura with a cataract needle, thus wounding the capillary vessels of the living lung. The lungs were fully dilated while I effected this, and, to my surprise, scarcely a drop of blood followed the instrument. As the lungs fell in expiration, the wound began to bleed—always bleeding most freely in complete expiration. This experiment was repeated many times, in the presence of Drs. Brinton, Morehouse, and Da Costa, and always with the same result, so long as we took care to injure no large vessel. The inference seems to me a fair one; that, in full inspiration, the capillary circulation of the lungs is somewhat impeded. If this be so, then, in fixed and complete inspiration, the left heart will, for a time, receive less blood than usual, and the excess will exist in the right heart and pulmonary artery. Is this the cause of the slow pulse of full inspiratory fixation? Some light is cast upon the subject by a study of the phenomena of asphyxia. In that condition, the heart beats slowly, as soon as the circulation begins to be arrested in the minuter vessels of the lung. The conditions are then to some degree alike—too much blood on the right side, too little on the left. Without doubt, the slow pulse of asphyxia is also due, in part, to other causes, but the circumstances I have named have always been admitted to exert a large share in the phenomena in question. While offering this as a partial, and, I admit, not a wholly satisfactory account of the pulse change in inspiration, I do not mean to exclude the element of reflex nervous impression.<sup>1</sup>

Finally, in sudden and violent muscular exertion, the right heart receives for a moment an excess of blood; yet, in this case, it beats more rapidly. In inspiratory fixation, there is also a surplus of blood in the right heart; but, in this instance, it is a *reflux* of fluid which congests the pulmonary arteries. We have also, in inspiratory fixation, the other additional element of deficient supply to the left heart. We have no further means of estimating the relative effect of these several sets of conditions to which the two hearts may be subjected.

In fixed expiration, the pulse rises. I believe this to be owing to three causes.

<sup>1</sup> Weber has assured us that galvanic irritation of the medulla oblongata, or of both vagi, retards the heart's movements.



First. In expiration, the lungs contain enough of air to allow of the freest circulation, until asphyxia ensues.

Second. The muscular exertion requisite for perfect expiration is one-third greater than that necessary for deep inspiration, and, as we well know, muscular action quickens the pulse.

Third. It appears possible that, during profound expiration, the heart may be mechanically stimulated by the pressure of the other thoracic viscera.

If, during life, the lungs are made to press upon the heart of an animal, the pulse becomes rapid, as it does when grasped by the hand of the vivisector. We shall see further occasion to rely upon this explanation as the true one.

At the close of inspiration, the air of the lungs is in equilibrium with that of the external atmosphere. If, while the lung is thus filled, we make an effort to expire, and at the same time close the glottis, or expire against a heavy column of mercury, the thoracic viscera will be compressed by the action of the muscles of expiration. Under these circumstances, the slow pulse of full inspiration, quickens, but not usually enough to neutralize altogether the depressing influence which the full lungs exert upon the heart's movements. The effect is best observed in susceptible cases. It may be due partly to increased muscular action, and partly to the pressure just now alluded to. Occasionally, I have met with persons who could not hold the chest in a state of fixed and passive inspiration, or who could only retain the air by compressing the nostrils and closing the mouth. Such cases are usually exceptions to the rule of the slow inspiratory pulse. I have as yet only hinted at these exceptional instances. In some of them, the pulse of fixed inspiration, at first slow, becomes very soon more rapid than the normal standard. In other cases, the pulse of inspiration obeys the law at one time, and becomes exceptional at another—as in fever. The cases of exception do not exceed one in twelve, and the law of a rapid pulse in expiration is almost without exceptions.

Besides these considerations, there are doubtless individual peculiarities in the cardiac appreciation of stimuli. For example, during fixed inspiration, in some men, the influence of compression may be such, and so great, as to counterbalance the depressing agency of an interrupted or delayed pulmonary circulation. The whole subject is well illustrated in the effect of a vacuum upon the pulse of an isolated yet active heart. As a rule, the frog's heart ceased to act when placed under an exhausted receiver. Sometimes, and in some hearts, no change could be thus induced, and once, I saw the heart of a sturgeon, actually accelerating its movements, when in vacuo.<sup>1</sup>

Many applications of an interesting character will strike the intelligent reader, in connection with the facts of the paper I am about to close. Assuming the facts as correct, and the explanations as truthful, the following illustrative inferences must claim a share of attention:—

<sup>1</sup> See T. H. Bache and the author, in *Dunglison's Physiology*, vol. ii. p. 150.

1. It seems to me clear enough, that the pulmonary circulation is modified by the various conditions of respiration in which the lungs may be placed. Do not relatively similar effects attend every respiratory movement, however simple? We cannot demonstrate this upon the healthy living lung, yet the inference would seem to be a fair one.

2. During complete inspiration, the tide of blood is momentarily retarded in the capillaries of the lung. Aeration of the vital fluid then takes place with the greatest facility; and during expiration, and more especially in complete expiration, the blood thus fully aerated is expelled from the lungs by the rapidly acting heart. In other words, the circulation in the lungs is slower when these organs contain most air, and becomes most easy and rapid during the movement of expiration.

The effect of respiration, in mechanically diverting the blood from the course of the foetal circulation, is also of interest in this connection.<sup>2</sup>

At this point I shall leave this interesting subject. If I have failed to observe correctly, or to reason justly, I shall at least have called to the task more careful observers, and more able thinkers.

In the course of this paper, I have avoided detailed accounts of individual vivisections, preferring rather to state results than to overload my pages with useless matter. Many of the vivisections alluded to were made by the skilful hands of my friends, Drs. Morehouse, and Brinton, aided by our private pupils, whom I desire to thank for their kind and ready aid.

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ART. VIII.—*Iodine Injections in Leucorrhœa.* By THOS. T. RUSSELL, M. D., Pattersonville, La.

It is not my design, in this communication, to enter into any theoretical inquiries respecting the nature of leucorrhœa, or the *modus operandi* of the remedy I propose for its cure; my object being simply to give the results of my experience in relation to iodine as a remedial agent in this obstinate, and in many cases, intractable disease; and in doing which, I shall record facts, well assured that one well-attested fact contributes more to the advancement of the science of medicine than three-fourths of the theories to which the press has ever given publicity.

I consider this disease to consist in inflammation of the vagina or the internal cavity of the uterus, or of both; and in the majority of those cases which have continued for a number of years and resisted the ordinary modes

<sup>1</sup> During profound inspiratory fixation, nasal hemorrhage is lessened, and sometimes completely arrested. Baurdon, *Récherches sur la Mécanisme de la respiration et sur la circ. du Sang.* Paris, 1820.

of treatment, ulceration to a greater or less extent will generally be found to exist. For this condition, I have found no remedy equal to iodine; and, in illustration of its effects in my hands, I will briefly detail several cases from a number that have come under my observation:—

CASE I.—In July, 1848, I was requested by Mr. W——, to visit Grace, a favourite mulatto servant, aged about 48 years, who, he informed me, had leucorrhœa of twelve years' standing; had been under the care of a number of physicians during this period, and had been subjected to a great variety of treatment, but without avail. I found her confined to bed, very much debilitated and emaciated, face cadaverous, pulse quick and feeble, skin cool, urine scanty, severe pains in the lumbar and pelvic regions, and œdema of the lower extremities. The vaginal discharge often escaping by gushes, was excessive, and her general health had become seriously involved from the effects of this long-continued drain to the constitution. Upon examination per vaginam, the vagina, os, and cervix uteri were found to be in a sub-inflamed condition, and denuded of epithelium. The os was partially everted, and when deprived of its adherent mucus, presented a vermilion colour. The external cervix was enlarged, indurated, and ulcerated. The body of the uterus was sensibly enlarged, and descended within two inches of the os externum. The secretions from these several parts varied essentially in character, and when discharged externally resembled somewhat, in quantity, consistence, and colour, the yolk of an egg intermixed with purulent and sanguinolent matter, and all blended in a thick, opaque, tenacious plasma.

Ascertaining that she had never used iodine in any form, and believing it would afford her relief, I ordered the aqueous solution of the following strength to be thrown up the vagina twice daily, and retained several minutes, the parts being previously well syringed with warm water and castile soap, and the patient placed in a horizontal position with the hips elevated:—

R. Iodini gr. i; potass. iodid. gr. ii; aquæ pluvialis ℥i. M.

As this solution ceased to create any sensation of warmth or excitement in the parts, it was gradually increased to treble its strength. The muriated tincture of iron in the proportion of twenty drops three times daily was given as a tonic.

Under this treatment, with a nourishing diet, she soon began to improve; the irritated condition of the parts gradually subsided, the muco-purulent discharges by degrees ceased, the cervical ulcers regularly healed, and at the end of three months from its commencement, she had regained her health and strength to such an extent as to enable her to resume her occupation as cook to the family. I may add, that her mammæ, which were very small and flaccid, became full and enlarged while under the influence of this medicine, and for several weeks secreted rather copiously a brownish watery fluid. This secretion being tested with starch, produced the characteristic blue color, showing that the iodine was absorbed.

CASE II.—*August, 1848.* Mrs. W—— consulted me; she was aged 19, small and delicate figure, had been married four years, and dates the commencement of her present "weakness," to an abortion which occurred about six months subsequent to her marriage. Prior to marriage she was remarkably healthy and active. At the time I saw her, she was anemic and emaciated, countenance chlorotic, eyes sunken, pulse feeble, menstruation painful, and either scanty or profuse. The vaginal discharge was constant and copious, muco-purulent, slightly streaked with blood, and very offensive. An

examination, with the speculum, revealed an irritated condition of the vagina, with relaxation and loss of its natural rugæ, and accompanied by a partial displacement of the uterus. The cervix was enlarged and indurated, with several ulcers upon its external surface. She had never submitted to medical advice, contenting herself with the use of some simple domestic remedies. Correcting the torpid condition of her liver by means of the usual remedies, I prescribed the aqueous solution of iodine and the muriated tincture of iron as above, recommending a nourishing diet, with free exercise in the open air.

She gradually improved under this plan of treatment, and in a few months her general health was re-established. She has, I understand, continued well ever since.

**CASE III.—October, 1850.** Mrs. G——, æt. about 27, large frame, mixed temperament, five years married, but has never been pregnant. Says that she was never "sick" previous to marriage, but subsequent thereto has always been in "delicate health." Has enlargement and induration of the liver and spleen, sequelæ of intermittent fever, menstruation irregular and profuse. She was sallow and exsanguined, and exhibited, in a great degree, that long train of symptoms consequent upon an obstinate and protracted leucorrhœa. The vaginal discharge was constant, but variable in quantity and quality. Occasionally, it was thin and acrimonious, often viscid and scanty, but usually purulent or muco-purulent, and excessive. The cervix was soft and tender to the touch, and when seen by the speculum was found enlarged and presenting a dark grayish appearance. The os was patulous, with tumefied edges, and of a reddish tint. A slight abrasion was found on the posterior lip.

Astringent vaginal injections—as the nit. argent. acetat. plumbi, &c., were advised, and to relieve the enlarged and indurated condition of the liver and spleen, I prescribed the following:—

R. Prot. iod. mer. ℥i; pulv. aloes ℥iss; ext. hyoseyami ℥i. M. Div. in pilulæ xxiv. One pill to be taken every night; at the same time five drops of nitro-muriatic acid in a wineglassful of the infusion of gentian, three times daily, was administered. Under this treatment, the visceral derangements totally disappeared in about eight weeks, and her general health was greatly restored.

The leucorrhœa still continuing (no benefit having resulted from the use of astringent injections), and no amelioration in the condition of the parts being found on a second vaginal examination which was now made, I ordered the aqueous solution of iodine and the muriated tincture of iron as above recommended. In six weeks after using these remedies, she declared herself well; shortly afterwards became pregnant, and was in time delivered of a fine healthy child.

Other cases could be adduced to prove the remedial powers of iodine as a local remedy in leucorrhœa, but as they are somewhat similar to the above in all essential particulars, it is unnecessary to introduce them here. Regarding the disease as being essentially a local one, our mode of treatment is principally local, and applied by means of a proper syringe to the parts affected. The preparation should at first be made weak, and gradually strengthened as the parts become accustomed to its application. The mildest preparation is frequently disagreeable, and sometimes painful, but these sensations are only momentary.

We have used it varying in strength from one to four grains of iodine with double the quantity of the iodide of potash to an ounce of water. It may be applied once or twice a day, or once every second or third day, as occasion may require. In some of the severer forms of this complaint, attended with considerable abrasion and ulceration, the diluted tincture may be used with great advantage.

Its curative powers are far greater than the nitrate of silver, which, in our hands, often seemed to exasperate the complaint, or any other remedy with which we are acquainted.

As an internal remedy in leucorrhœa, iodine has been recommended by Goden, Broglió, and other continental physicians; but in our hands, notwithstanding the genito-urinary organs appear to be most susceptible to its action, it has proved of little or no value; our experience with it, in this respect, coinciding with that of Eberle, Barbour, and others of our own country.

Müller, Gimelle, and Jewell applied it in the form of ointment to the inner sides of the thighs with success, and are advocates for it.

We have never seen or heard of iodine being used as recommended in the foregoing, and do not know whether there is any originality in it; neither do we care; our object being simply to call the attention of the profession to it, with the hope that they may be so far influenced by our humble testimony in its favour as to be induced to give it a fair trial. If so, and it proves but half so successful in their hands, in relieving their fair patients of an obstinate and disgusting disease, as it has done in ours, we shall feel amply rewarded for the little trouble this paper has cost us.

NOVEMBER, 1853.

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ART. IX.—*Gastrotomy twenty-one hours after Rupture of the Uterus; Removal of a Dead Child from the Abdominal Cavity, with a Successful Result.* By JOHN T. GILMAN, M. D., Portland, Maine.

MRS. HICKEY, an Irish woman, aged about thirty years, of small stature, spare habit, and delicate constitution, was taken with labour pains; her third confinement, early in the morning of September 24, 1853. Her previous labours were severe and protracted, especially the second, when the child was taken with forceps, while the mother was suffering with puerperal convulsions.

Her physician, on the present occasion, informed me that he was called at 10 A. M.; labour pains were then frequent and regular; the os uteri sufficiently dilated to admit the end of his finger; the membranes entire; the head presenting. Her pains increased in strength and frequency through the day, although they accomplished but little; the os, at 9 P. M., being rigid, and dilated only to the size of a quarter of a dollar; the head remaining in the superior strait.

At 11 P. M., after a pain of great severity, the patient complained, sud-

denly and urgently, of great abdominal distress; and there was an entire cessation of uterine pains. He, believing labour was suspended, and that his services would not be required for the night, left his patient at 12. He was summoned again at an early hour in the morning, and found her free from uterine pain, but having the same indescribable abdominal distress. Considerable flowing had occurred, and she was somewhat exhausted. On examination per vaginam, the presenting part was found to have receded—the head could not be felt. He administered stimulating drinks and ergot in repeated doses, with the hope that they would excite uterine action. Failing to accomplish this, and conscious that something of a serious nature had occurred to his patient, he called Dr. Durgin, of this city, in consultation. After making a careful examination, Dr. D. suspected that the uterus was ruptured, and the child had escaped into the cavity of the abdomen.

I was called to the case late in the afternoon of Sunday, with Drs. Daveis, Thomas, and Le Prohon. We found a rent of the uterus, extending from the os upwards and backwards, and the organ itself firmly contracted. No part of the child could be felt. The abdomen was enormously distended, and so tender that she could not bear the slightest pressure upon it. She was in great distress, and entreated earnestly for relief.

The deplorable situation of the patient was faithfully represented to her and her friends, and the operation of gastrotomy proposed as affording the best, if not the only chance of recovery, which was readily assented to.

The patient was removed from her bedroom to a spacious adjoining chamber, the temperature of which had been raised to about 80°, and placed upon a mattress resting on two firm tables. Pure sulphuric ether was first administered, but failing to produce its anesthetic effect, chloroform was substituted, and the patient soon brought under its influence.

The water having been drawn from the bladder by the introduction of a very small gum-elastic catheter, assisted by the gentlemen before mentioned, I made an incision through the abdominal parietes, commencing an inch above the umbilicus, and extending down along the inner edge of the left rectus muscle to within an inch of the pubes. The back of the child presented to the parietes, the head resting on the pubes.

The abstraction of the child and placenta was soon accomplished; coagula, and the fluids effused into the cavity of the abdomen, were expelled through the aperture. The divided surfaces were carefully brought together and secured by ligatures and adhesive straps, and a wide flannel swathe placed around the abdomen. The child was of large size and well formed, and had remained doubtless in the abdominal cavity from 11 P. M. Saturday, till 8 P. M. Sunday—a period of twenty-one hours.

The patient soon recovered from the effect of the chloroform, and expressed herself as being entirely free from distress, and not feeling so much exhaustion as after her previous confinements; and, indeed, the vital powers did not seem so much depressed after as before the operation. An opiate was administered, and our patient, hopeful and happy, was left in the care of faithful attendants for the night.

Monday morning, 26th. Patient slept well; free from pain; but little tenderness or fulness of the bowels; pulse 90, with good expression of countenance; evening, the same.

Tuesday morning, 27th. Pulse, 95; slept part of the night; abdomen more swollen and tender; directed an enema of castor-oil and the oil of turpentine, and the application of strong mercurial ointment to the abdomen, covered with oiled silk.

Evening. Enema operated well, and gave sensible relief.

Wednesday morning, 28th. Passed a sleepless night; increased abdominal swelling and tenderness; pulse 105; increased thirst; regurgitation of drinks from the stomach. Evening. Thirst and fever augmented; bowels tympanitic, with almost constant surging of wind, and regurgitation from the stomach.

Thursday morning, 29th. Passed a very restless and uncomfortable night; pulse 112, with increased tympanitis, tenderness, &c.; regurgitation of yellow bile; sufferings augmented by bronchial irritation and cough. Directed an ounce of castor-oil to be given with a drachm of oil of turpentine. Evening. Cathartic operated powerfully, and with great relief to the patient; pulse 105: bowels softer, and less tender; all the symptoms better.

Friday morning, 30th. Had a good night, with some quiet sleep; pulse 105. In the afternoon, all the distressing symptoms before enumerated returned with increased severity, and continued till 10 P. M., when a spontaneous diarrhœa came on, with very decided relief to the patient.

Saturday morning, Oct. 1. Pulse 100; diarrhœa continues; symptoms more favourable; patient pronounces herself better.

Sunday morning, 2d. Patient better; diarrhœa continues, but not to such a degree as to require any interference.

Monday morning, 3d. A decided improvement in every respect; all the symptoms highly favourable.

The patient continued to improve daily. The mercurial ointment was discontinued on the tenth day, having made a decided impression upon the system. The external wound, at that time, had united at several points, and presented a healthy appearance. The convalescence was rapid and uninterrupted. The patient was able to sit up on the fourth week, to walk about her chamber on the fifth, and to resume her domestic duties on the seventh.

At the present time, more than four months since the operation, Mrs. Hickey is in excellent health, and fully competent to discharge all the duties—laborious as some of them are—which belong to her humble condition in life.

In conclusion, I would briefly state that, in the treatment of this case, the mercurial impression was chiefly relied upon in its controlling effect upon inflammatory action. Opiates, in some form, were daily administered, and repeated as often as the comfort of the patient required them. The diarrhœa, which I attributed, in a great degree, to the action of the mercurial ointment, superseded the use of cathartics. Perfect quiet and rest were enjoined, and strictly observed. The diet, for the first two weeks, consisted of mucilaginous drinks, and occasionally of weak table tea. She afterwards partook freely and with great relish of grapes, and, on the twentieth day, of weak animal broths.

To my friends, Drs. Daveis and Thomas, I am greatly indebted for very valuable assistance rendered at the time of the operation, and during the subsequent treatment.

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ART. X.—*Case of Puncture of the Bladder through the Symphysis Pubis.*  
By D. LEASURE, M. D., New Castle, Pa.

ON the morning of the 15th of July, 1853, I was called to Mr. P., aged 72, of Neshanock Falls, who laboured under retention of urine.

Mr. P. has had for some years stricture of the urethra, and on several occasions resort was had to the catheter, the introduction of which, I believe,

was attended by no difficulty or inconvenience, though I have no personal knowledge of the case previous to my present visit.

Yesterday evening he was suddenly seized with retention of urine, and after waiting and trying such domestic remedies as had given relief on former occasions, he sent for his family physician, Dr. S. POPINO, of New Wilmington, who remained with him during the night, and made repeated attempts to pass a catheter, but, failing in all his efforts, he sent an express for me, with the warning that I should come prepared to puncture the bladder. I found the patient at nine o'clock in the morning of the 15th suffering extreme pain, and making frequent and violent efforts to void his urine, but unsuccessful in every instance.

The bladder was enormously distended, rising up nearly to the umbilicus, and, in short, presenting all the most urgent symptoms of a case of imminently dangerous retention. Dr. POPINO and myself again resorted to all the measures within our reach, before adopting the ultimatum of puncturing the bladder, a measure to be doubly deprecated on account of the age of our patient. In attempting to pass the catheter, we found difficulty, from a stricture about an inch from the orifice of the urethra, and from another about two inches further in its course, and from enlarged prostate. By care and patience, and cautious manipulations, we could pass the two former points, but by no amount of perseverance could we pass the instrument beyond a point immediately behind the prostate. By introducing a finger into the rectum, we could distinguish and guide the instrument past the prostate a very short distance, and no farther; owing, possibly, to the extreme distension of the bladder having dragged its neck upwards so as to change materially the anatomical relation of the parts, and thus prevent the introduction of any instrument, without resorting to unjustifiable violence. We bled the patient, *ad deliquium*, while in a hot bath, and then attempted to pass the instrument, but here we also failed, and, after exhausting all our resources, we decided to tap the bladder. This we had finally consented to do at the urgent solicitation of the patient, a man of more than ordinary nerve, and what is better, good common sense.

He was well aware of his desperate situation, and knew the dangers of the proposed means of relief, but there was no hesitation as to what should be done under the circumstances. For reasons not necessary to be entered upon here, I decided on the puncture through the symphysis pubis, and while the patient lay on his back, having carefully shaved the pubis, I introduced a thumb lancet through the skin and cellular tissue down to the symphysis; then taking the small common hydrocele trocar, with its canula, I passed it from a point about three lines above the centre of the arch, in a direction, pointing towards the promontory of the sacrum, with a slightly boring motion, after the manner of boring with a carpenter's sprigging awl, until, from having ceased to meet with any resistance for the last three-quarters of an inch, I felt secure the instrument was fairly in the bladder.

On the withdrawal of the trocar, the urine spouted out through the canula to the height of three feet; so great was the pressure from the walls of the distended organ. We drew off four pints in this way, and the patient expressed himself as being entirely relieved. We did not think it prudent to attempt to pass a sound at this time, but placed a little wooden plug in the canula, and left it, with directions to withdraw the plug every two hours, and allow the accumulated urine flow to out. The patient took eight grains of Dover's powder, and was left till morning.

16th. Patient passed a comfortable night. The urine was drawn off, by



the canula, several times during the night, but for the last six hours no urine would flow on the withdrawal of the plug, and the bladder was again distended and painful, with constant desire to micturate. We now attempted to pass a sound and catheter, but failed at the same point where we failed yesterday. I now passed a silver probe down through the canula, and found that the lower end of it had become plugged up by the mucous membrane of the bladder, which acted after the manner of a valve, and prevented the urine from passing out through it.

I passed a silver wire, doubled on itself, down through the canula, when the water was discharged through the space between the wire, but not in sufficient quantity to give speedy relief. I then passed the probe through the canula, and found the distance from the end of that tube, in the bladder, to the posterior wall of the viscus, to be two inches and a half. Withdrawing the probe, I introduced the trocar home, and pushed it, with the canula, an inch farther; and, on the withdrawal of the trocar, the urine flowed freely as before. After permitting one pint to pass off in this way, I attempted the introduction of a small sound through the urethra, and succeeded without any difficulty. I then withdrew the sound, and introduced a small elastic catheter, through which the urine passed guttatim. Withdrawing it, I passed a medium-sized elastic catheter, through which two pints more of water passed off. We now secured the catheter in the bladder, and withdrew the canula, after having remained twenty-six hours. A plug was placed in the free end of the catheter, which we directed to be taken out every two hours, to permit the urine to flow off, so as not to distend the bladder. The wound made by the trocar gave no pain, and was dressed by a little bit of isinglass plaster.

17th. Patient very much relieved; passed a comfortable night, and has some appetite this morning; urine has been drawn off every two hours. The wound made by the trocar looks well; gives very little pain, and no urine has passed out through it. The catheter was withdrawn, and a fresh one introduced, as the urine had partially dissolved the gum of the one used, and a somewhat troublesome experience has taught me that a partially dissolved gum-catheter is not quite a fit instrument to leave in an already irritated urethra. The catheter was left as before, and a laxative of castor oil ordered at night, to be repeated in the morning, if necessary.

18th. Patient doing well; had a good night, and oil operated twice this morning; urine has been drawn off several times during the night, and every two hours to-day. No pain or inconvenience at the seat of the puncture, which looks healthy, and the patient expresses himself as feeling quite well indeed. After allowing the urine contained in the bladder to pass off through the catheter, it was withdrawn, and left out until the return of Dr. POPINO, six hours afterwards; when, as no urine had passed, he introduced it, and emptied the bladder. The catheter was withdrawn and left out, with directions to a son of the patient, a gentleman of much intelligence and considerable ingenuity, to pass the instrument if his father should not succeed in micturating after two or three trials.

19th. Patient continues better; his son has drawn off the water twice since our visit yesterday, and there were not more than six ounces each time. He feels a disposition to urinate now, and not being able to accomplish it, the catheter is again resorted to, and about six ounces of urine drawn off. The wound in the pubis appears to give no inconvenience; indeed, he never seems to think of it, unless he is asked about it.

He now drew our attention to a soreness and enlargement of the right testis, which, he says, annoyed him for some time previous to the accession of his

vitality in the whole system than from any vice in itself. I discontinued the wine, and doubled the quantity of the brandy, directing it to be taken, with a tablespoonful of cod-liver oil, an hour and a half after each meal. Diet to consist of game, beef steaks and mutton chops, with fresh milk and eggs. From this time, he steadily improved until now. At the present time (November 1), he is able to walk about and see to his affairs, though he has been twice threatened with a return of his orchitis, owing to imprudence in assisting, with his own hands, in some of the more laborious occupations about the house and gardens. He has no difficulty in urinating, and the puncture at the symphysis has been entirely healed for some time. Of course, during so long an illness, presenting so many phases, a great variety of treatment was adopted to meet the various indications; but it is sufficient to say, that general principles, familiar to the profession, were closely adhered to; and the result proves that, under the most unfavourable circumstances of age, previous disease, and unlooked-for complications, the puncture of the urinary bladder through the symphysis pubis, in this instance, proved both safe and salutary.

As far as the operation itself is concerned, it is very simple. There are no very important parts to be penetrated; nor is there any danger of wounding neighbouring organs, as in the puncture per rectum, and there need be no possibility of wounding the peritoneum, as in the supra-pubic operation; and in the present case, the pain was almost entirely confined to the first puncture through the skin. This mode of tapping the bladder has not been very frequently tried, I believe, either in this country or abroad, and, if it should prove, after a fair trial, to be even as safe as the puncture by the rectum, it must prove of great benefit to a class of patients who sometimes suffer greatly from being placed in the hands of practitioners who have not the properly shaped instrument to operate by the rectum, and whose confidence in themselves is too feeble to permit them to undertake it.

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ART. XI.—*Ovarian Tumour of twelve years' standing, weighing forty-one pounds, and containing a large bony substance—successfully operated on.*

By J. TAYLOR BRADFORD, M. D., of Augusta, Kentucky, and A. DUNLAP, M. D., of Ripley, Ohio.

MY first visit to Miss H., of Mayslick, Ky., the subject of the present operation, was about the 25th of May. She had just returned from Lexington, Ky., where she and her family physician, Dr. Basil C. Duke, of Mayslick, had been for medical advice. Dr. Duke says, in a publication made by him: "When I became satisfied that it was a case of ovarian tumour, I insisted on Miss H.'s visiting some of the most distinguished surgeons; and I visited Lexington, Kentucky, in company with her, for the purpose. She was advised by all those to whom she applied, not to submit to the operation, as they looked upon it as hopeless."

Miss H. is twenty-one years of age, of medium stature, light hair, blue eyes, fair complexion, sprightly and intelligent. She had been a prey to the disease for *twelve years*, during which time she had subjected herself to varied and almost continued medical treatment, from different physicians. She stated to me that, whilst under a course of dieting, and such medicines as

kept her system in "tolerable condition," the tumour increased but slowly, but never diminished under any course of medical treatment.

The tumour made its appearance, at *nine years of age*, in the left groin, and she described it as being then about the size of a hen's egg. Prior to its appearance, however, she suffered from a severe attack of scarlet fever. The menstrual flux did not make its appearance until about *three years* after the appearance of the tumour, after which it occurred with remarkable regularity during the twelve years' existence of the tumour. She was occasionally subject to attacks of what some of her physicians called peritonitis, which rendered her helpless and bed-fast at times. Notwithstanding the long standing of the case, the steady, and at times rapid increase of the tumour, she never was tapped, and resisted it with wonderful determination to the last.

From the history of the case, and the unfavourable opinion of the medical men who had examined it, it is natural to suppose I commenced the examination with but little hope; so great, indeed, was my confidence and veneration for one of the distinguished men who had passed his opinion upon the case, that, after my examination was over, I stifled, as it were, my better conviction, and quoted and requoted in my own mind a precept in that "Book of books:" "Let him that thinketh he standeth, take heed lest he fall."

The examination was commenced by placing the patient upon the back with the hips a little elevated. The distension of the abdomen, upon first sight, seemed enormous, reaching the ensiform cartilage, distending enormously the false ribs, hanging in folds laterally over the spine, pressing up the spleen, pancreas, liver, and stomach, so as to elevate the diaphragm, and contract very considerably the thoracic space. The tumour had so completely filled up the abdomen that it was difficult to tell upon which side the preponderance lay. The cyst seemed round and smooth on feeling it through the parietes of the abdomen, and *unilocular* in its character. Upon the anterior superior part of the tumour above the umbilicus there was a hard *bony substance*, evidently imbedded in the sac, and seemingly about the size of the bottom of a saucer.

The walls of the abdomen were so completely filled up by the distension of the tumour, that very little movement of the tumour could be effected in any position. I had the under dress removed, through which I had commenced the examination (pardon me for it), and the thighs flexed upon the abdomen in order to relax the abdominal parietes. I then gathered up the parietes of the abdomen, with both thumbs, and the fingers, in a fold, and glided them over the bony substance to and fro, now and then pushing the bony substance with one thumb from me, whilst I held the gathered up parietes of the abdomen firm. The bony substance could be moved slightly to either side, and upwards, but imperfectly downwards. When I became satisfied that the hard substance was within the sac, and but slightly, if at all, adherent to the peritoneum, I continued the examination in a similar manner over the abdomen, holding up the integuments with both hands, and pushing the sac from me with the thumbs, then allowing the folded parietes to contract to their place, and observing whether there would be a line of adhesion showing itself in the contraction. The sounds of percussion were dull over the entire abdomen, except upon the right side near the spine, and but feeble, then, except when lying upon the left side.

On examination *per vaginam*, fluctuation was distinct, and the same smooth, elastic sensation of the sac responded to the finger, which was perceptible over the abdomen. The vagina was slightly drawn up, and the womb thrown back upon the rectum. The examination by the rectum pre-

sented the same characteristic as that by the vagina. The patient was placed upon her feet, and an assistant behind her, with both of his hands applied over the lower part of the tumour immediately over the pubis. I directed the assistant to raise the tumour as high as possible, whilst I retained my finger as high up in the vagina as would enable me to determine whether there were any adhesions to the womb. The tumour could be raised in this way nearly out of the reach of the finger without producing any pain or unpleasant sensation in the region of the womb, but excited much difficulty of breathing from the pressure against the diaphragm.

After concluding my examination, I remarked to the patient that there was hope from an operation; put her upon a course of diet; directed her to take, every other night, a blue pill; and to keep her bowels open with carbonate of soda and rhubarb. On my second visit to her, which was ten days after, Dr. Dunlap accompanied me, and, after a careful examination, he expressed his convictions in favour of an operation.

The patient's health for some time had been rapidly declining, the difficulty of breathing consequent upon the infringement of the lungs by the enormous tumour, together with a general debility, rendered her condition very unhappy, and it was evident that sooner or later she must fall a prey to its progress. We told her of the difficulties and danger of the operation, the ratio of mortality in the hands of operators; her mind, however, was unrelentingly made up to be operated on, notwithstanding the dissuasion of many of her friends; some of them, however—her father and mother—did not oppose, but were afraid, because of their doubts, to advise. And perhaps but one amidst a large circle of friends encouraged her to the operation.

On the 14th of June last, Dr. Dunlap and myself, assisted by Dr. Basil C. Duke, commenced the operation. The patient was placed upon a table, with the shoulders slightly elevated, the feet resting on a chair, and when sufficiently under the influence of chloroform, an incision through the *linea alba*, below the umbilicus, of about five inches, was made; the integuments, layer by layer, were carefully divided, until the ovarian cyst was exposed to view, which may be readily known by its remarkably bright glossy appearance; then by the use of the fingers and the probe-pointed bistoury, the incision was carried upward two inches above the umbilicus, and downwards to the pubis. The hand being now introduced and carefully glided round over the cyst, it was found that a strong adhesion to the omentum existed at the upper part of the tumour; and believing it to be safer to divide all adhesions except at the base of the tumour, before puncturing the sac, I was compelled to extend the incision four or five inches higher, which made an incision in the aggregate over the tumour of from eighteen to twenty inches in length. The bands connecting the tumour to the omentum proved to be large and very firm, and were inserted by several points into the *visceral substance*, which had been recognized before the operation. It required considerable force to break up the adhesions, which was done by Dr. Dunlap, my assistant, with the fingers and handle of the scalpel. Very little hemorrhage occurred from so large an adhesion, so little, indeed, that no ligature was applied. The most pendent part of the sac between the umbilicus and pubis was now punctured; whilst an assistant placed the palms of his hands along the edges of the wound, immediately opposite to the puncture, to prevent the escape of fluid into the abdominal cavity, and with the extremities of the fingers gradually compressed the walls of the tumour, to expedite the escape of the liquid contents. After drawing off a considerable quantity of the straw-coloured liquid, we attempted to raise the tumour out

of the abdomen, but finding it yet too heavy to handle, we determined to draw off what fluid still remained. This being done, Dr. Duke placed his forefinger in the orifice punctured, which enabled us readily to get to the base of the tumour, where, fortunately, there were no serious adhesions. Lifting the tumour from its cavity, the pedicle was transfixed with a needle armed with four strands of saddler's silk; the ligature was then divided at the eye of the needle, and each segment of the pedicle securely tied. The neck of the pedicle being very short, it was divided close to the sac, which is probably the safest, be it long or short.

On the removal of the tumour, the liver, the stomach, the spleen, and intestines were all in full view, apparently healthy but flattened, exciting our wonder, how they could perform their functions under such encroachments. The intestines were not disturbed further than was requisite for sponging out the blood and little liquid which had insinuated itself among them.

The wound was brought together, and secured by seven needles with twisted sutures, assisted by numerous strips of adhesive plaster sixteen inches in length, and applied about one inch apart; then a strip applied up and down each side of the incision, the better to secure passiveness in the abdominal muscles, and to increase the efficacy of the cross straps. Two napkins were then folded in such a manner as to fill up the vacuum and irregularities of the abdomen, and a broad roller pinned tightly over it, to serve as a support to the abdomen, and keep in check the spasmodic action of the abdominal muscles, which is sometimes a source of much suffering.

The patient was kept under the influence of chloroform during the entire operation, but not so fully as to render her at times insensible to the progress of the operation. The pulse kept up remarkably well; but a little brandy and water was given, to support her during the change of her dress, after which she was put to bed, and expressed herself as being quite comfortable.

On examination of the tumour, which weighed forty-one pounds, the hard substance spoken of as felt through the walls of the abdomen, proved to be *perfectly-formed bone*, as large as the bottom of a saucer. The surface of the sac, on the inner and front part, was rugous and uneven, studded over with innumerable small particles of bone, varying in size and shape from that of the thumb-nail, down to that of a pin's head; whilst that part lying next to the back was smooth, without any appearance of osseous degeneration. At the bottom of the tumour, that part lying in the pelvis, there were several small fleshy tumours of various sizes, from that of a cocoa-nut to that of a hen's egg. On cutting into these tumours, a little jelly-like fluid escaped, and within each one there were found to be a series of still smaller sacs of various shapes. Extending the examination still further, and cutting into these tumours, each one had its little group of tumours still smaller and smaller, each one, however small, containing its group; and when opened, manifesting the same curious variety of shapes.

Two hours after the operation, the patient complained of considerable pain in the region of the womb; half a grain of morphia, in a little brandy and water, was given, and in a short time she expressed herself as feeling better than she had for many months. Six hours after she suffered very much from pains, similar to after-pains, during the interval between which she was comparatively easy. The morphia was repeated, and the bandage, which had become more lax, was pinned tighter, which enabled her to rest well during the night.

For several days the catheter had to be introduced, and the urine drawn off. The bowels were not disturbed for forty-eight hours, when an injection

of gruel and lard was given, which acted kindly. On the fourth night after the operation, I was aroused from my sleep by the nurse, who stated that my patient was much worse, that inflammation was taking place—that she could not bear the bedclothes upon her bowels; fever high; pain great, &c. &c. I hastened to the apartment, and found her suffering very much. The pulse was over 100 in the minute; hot, dry skin; some pain in the bowels; had had two slimy griping operations from the bowels, and was much alarmed. Gave a teaspoonful of camph. tinct. opii; had the skin sponged with cold water, into which a little salæratum was thrown; adjusted the bandage; and in two hours the skin became soft and moist, and she rested well during the night. Nothing of interest occurred until the ninth day, when a hacking cough occurred, which threw her into most violent paroxysms of pain in the abdomen at each effort of coughing. I gave equal portions of hive syrup and camph. tinct. opii, teaspoonful portions, every two hours; applied tartar emetic plaster to the top of the chest, which gradually reduced the cough, and she again improved.

On the morning of the sixteenth day after the operation, on entering her room, I found her standing at the window. I accosted her with my usual salutation: "How do you feel this morning, Miss Nannie?" She replied, with a smile, placing her hand over her bowels: "I feel exactly like I couldn't find myself." The wound healed kindly. During the fifth week after the operation she returned home; but not until the sixth week did the ligature come away. She is now in good health, having gained some forty pounds since the operation.

As both in Europe and in this country so much contrariety of opinion exists as to the operation of ovariectomy, each case, whether successful or not, is a matter of deep interest to the profession. Our own observation enables us to realize that many, very many cases, owe their failure to gross errors in diagnosis—a lack of discrimination between that class of cases which would warrant an operation, and those which would be fatal, with or without it. Out of some *ten* cases examined by Dr. Dunlap and myself, we have operated upon but four, all of which have been successful; one of them, a patient of Dr. Dunlap's, has, since the operation, given birth to a healthy child.

It is true that Lizars, distinguished as he is, in the first operation for ovariectomy performed in Europe, operated on a case which proved to be *obesity*, and the most distinguished medical men of Edinburgh, in their examination of the case, pronounced it ovarian. Still, I may be safe in predicting that any reputable operator, "posted up" in the present diagnosis, imperfect as it is, will not commit a like blunder in the present generation.

If an operator has any doubt about the disease being ovarian, he ought not to operate; and if it is ovarian, and the indications are, that the adhesions are numerous and dangerous, and the tumour of such a character as to embarrass materially his diagnosis, he should, as Willis advises a literary friend, "Sit quietly down and look at the probabilities;" he should wait further developments, or not operate at all.

P. S. Shortly after the present operation, I received a letter from Dr. Lightfoot, stating that it had excited considerable interest among the medical men in the city of Louisville, and that Prof. Yandell desired me to communicate to him the particulars of the operation. In compliance, I wrote Prof. Yandell a letter, giving some of the leading features of the case, which he was kind enough to publish in his journal. Since that time until the present, I have not had leisure to write out the case for your journal in detail.

AUGUSTA, Ky., January 24, 1854.

ART. XII.—*Case of the Simultaneous Dislocation of both Femora upon the Obturator Foramina, with Protrusion of the Head of the Left Femur through the Obturator Foramen of that side into the Cavity of the Pelvis.* By THOMAS C. BARKER, M. D.

THE subject of this dislocation was Jeremiah S., an Irishman, 19 years old, of a rather slender form, a tailor by trade, but employed here as a waiter upon the table.

Early on Monday afternoon, October 17, the patient was crossing the Rio Chagres, upon the scaffolding employed in the erection of the railroad bridge across the river at this place, when he slipped and fell, feet foremost, a distance of some twenty-five or thirty feet upon the sand on the bank of the river, and, striking upon the inner sides of his thighs, they were forcibly thrown apart, and the heads of both *femora* were dislocated into the *obturator foramina* respectively of each side. The thighs were directed forwards and outwards, and flexed at an obtuse angle upon the *pelvis*; but which angle approximated much nearer to a right angle than is generally represented in the books which treat of this dislocation.

Complete extension could not be made of the thighs upon the *pelvis*, nor of the legs upon the thighs, though the thighs could be flexed at an acute angle upon the *pelvis*, and the legs could be flexed at a like angle upon the thighs. No serious injury, other than the dislocations, was received by the patient.

I was called to the patient, where he fell, in a few minutes after the accident had occurred; and he was immediately removed to the shanty near by, which was occupied as a hospital upon San Pablo Station of the railroad.

Dr. Foot, one of my colleagues of the medical staff on the Panama Railroad, from a neighbouring station, was present at the time upon this station.

We laboured, for nearly two hours, to reduce the dislocations by means of manual traction and manipulation; blankets (the only apparatus at hand) being applied for making extension and counter-extension, in which we were aided by assistants. All our exertions to withdraw the head of either of the *femora* from its unnatural position were, however, entirely unavailing. Late the same afternoon we renewed our efforts, but with the same ineffectual results. It need hardly be said that we made extension in those directions and by those methods which are laid down as the best in standard works upon surgery, and which I had previously found effectual in similar dislocations. But we were disadvantageously situated, for we were unable to procure two yards even of cord or rope, or any pulleys upon the station.

Further attempts at reduction of the dislocations were discontinued for that day, and an anodyne was administered to the patient. The next morning (Tuesday, the 18th), it was found that he had passed the night without any severe suffering.

No attempt was made that day to reduce the dislocations, and it became necessary to go to Aspinwall, twenty-four miles, to procure compound pulleys, cord, and swathes, which were not obtained till the next day (Wednesday, the 19th).

Dr. Foot was present to assist; and I had the aid also of Dr. Rogers and Dr. Loving, my colleagues of the medical staff from neighbouring stations upon the railroad.

Early in the afternoon of Wednesday, the 19th, we commenced our opera-

tions upon the patient. We first put him under the influence of chloroform; and, after the muscles had become apparently relaxed, we made use of manual traction and manipulation, but without any perceptible effect in removing the head of either *femur* from its abnormal position. We next resorted to the use of the compound pulleys. Having secured the *pelvis* by a swathe passed around it and padded with cotton-batting, to which was attached a cord, to a post in the wall for counter-extension, we then made gradually increased, steady, and continuous extension upon the right thigh by means of a swathe passed around it, to which was attached a cord from the compound pulleys; but we found that though the patient, by inhaling the chloroform, was reduced to a state of unconsciousness, and the muscular system was flaccid and powerless, yet, whenever any traction was made upon the limb, an involuntary and spasmodic rigidity was induced in the muscles upon which traction was made; and often, not in those muscles alone, but in those of almost the whole voluntary muscular system. This we could overcome only by continuing the extension steadily and unremittingly while we kept the patient under the continued influence of chloroform.

At length, by the aid of the compound pulleys, we succeeded in dislodging the head of the right *femur* from its position upon the *obturator foramen*, and in reducing it into place. This was effected in the method recommended by Fergusson, Miller, and other surgical authors.

We next commenced operations, by means of the compound pulleys, upon the left thigh in a manner similar to that which we had adopted with the right one, and we laboured for nearly an hour, but without any favourable results. But, finding the patient much exhausted from the continued exertions at extension and from the effects of the chloroform, we desisted from any further efforts that day, and, an anodyne having been administered to him, all further attempts at reduction were postponed till the next day.

About 11 o'clock, the forenoon of the next day (Thursday, October 20), we again resumed our operations upon the patient, who had rested better, perhaps, during the night previous, than could have been anticipated. We first constructed a firm and narrow couch, by placing boards upon two forms, with a hard mattress upon the boards. The patient was then laid upon the mattress on his back, and a stout swathe of sheeting, with cotton-batting between it and the patient's body, was passed across and in front of the *pelvis*, and then brought under the boards of the couch, where it was firmly secured, and a stick was placed in it, by turning which, the swathe under the couch would be twisted and consequently tightened.

This day, we combined *one part of sulphuric ether* with *two parts of chloroform*, and we found *anæsthesia* more easily produced, and that the depression was less, from this combination, than from pure chloroform, which we had used the previous day.

But we laboured from two to three hours without any beneficial results, though we varied the direction of our extension, resorting to all the methods which are recommended for the reduction of this dislocation. And though we made a most thorough trial of the mode recommended by Fergusson and Miller, which had been successful in the reduction of the right thigh, it utterly failed with the left one.

This day, we all perceived what a part of us had thought we detected the day previous, a *crepitus* and a jerky movement upon slacking up the cord on the pulleys after extension had been made forward from the patient's body and downwards towards his feet.

Upon examination *per anum*, the head of the left *femur* could be plainly



felt through the walls of the *rectum*, projecting through the *obturator foramen* into the pelvic cavity, and its motions could be distinctly perceived when the thigh was rotated.

As the patient was somewhat fatigued, we left him to repose for more than an hour, and we then began our operations upon him again.

The patient, having been again put under the influence of the combination of chloroform with sulphuric ether, the left thigh was strongly flexed upon the *pelvis*; thus making a fulcrum, like a cushion, of the soft parts upon the anterior portions of the thigh and the *pelvis*; so that, in this position, only moderate pressure made upon the knee was requisite to raise the head of the bone entirely out of the cavity of the *pelvis*.

A swathe having been applied around the left thigh, a cord from the compound pulleys was attached to it, and the pulleys were affixed to a beam some six or eight feet above the couch.

Extension was then made, in the line of flexion upwards, towards the patient's head, at an angle of about *fifty degrees* from the horizontal plane of his body, and about *twenty-five degrees*, laterally, from the vertical median plane. And this extension was moderately strong, and steadily continued, while counter-extension was maintained by the couch upon which the patient was fixed, being kept immovable by assistants sitting upon it. The direction in which extension was made was, at times, slightly varied, yet the general course in which it was continued was the same; and manipulation, by rotating the thigh, was at the same time practised.

After some ten or fifteen minutes of persevering and unremitting effort, the patient, meanwhile, being kept under the influence of the anæsthetic compound, the head of the *femur* (it having been previously withdrawn, as before described, through the *obturator foramen*, from the cavity of the *pelvis*) was returned to its place in the *acetabulum*. The *crepitus*, which had been observed, must have been produced by the friction of the head of the *femur* against the margin of the *obturator foramen*.

A pillow was placed between the patient's lower extremities, and they were confined together by two swathes; he was allowed to have some brandy and water; and a full dose of solution of morphia was afterwards given to him before bedtime. He passed a very comfortable night.

He continued to improve in health and strength afterwards; and though there remained some slight degree of stiffness and soreness about the left hip for some time, he is now perfectly recovered.

The swathes were retained about his thighs and legs, and he was kept quiet in bed for a few days. But within ten days after the reduction of the dislocation of the left *femur* he was walking about, and was able to perform the duties of his situation.

BARBACOS, NEW GRENADA,

UPON THE PANAMA RAILROAD, December, 1853.

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ART. XIII.—*Removal of the Astragalus.* By F. M. ROBERTSON, M. D.  
Lecturer on Obstetrics, &c. in the Charleston Medical Institute.

Mr. T. B., the subject of this case, was about 44 years of age, tall and spare, but muscular. His habits were occasionally intemperate. His pe-

riodical "sprees" usually wound up by an attack of delirium tremens. In the present instance he was suffering under an attack of this nature, in consequence of a protracted debauch.

On the night of the 19th July, 1851, while in a state of mental derangement from the cause just cited, he arose from his bed about 12 o'clock, and commenced groping about the passage of his hotel in search of water. He made his way to the head of the staircase, and, instead of descending in the ordinary manner, threw himself over the banister, and was precipitated, about twenty feet perpendicular, upon the steps below. He was taken up by the watchman of the house, who called assistance, and conveyed him to his room. I was sent for immediately.

*Nature of the Injury.*—I found the left foot turned completely inwards, and, on attempting to stand, the outer margin of the foot rested upon the floor. The lower extremity of the fibula was torn from its connections with the tibia and astragalus, and thrown backwards. The astragalus was dislocated forwards and outwards, being completely turned over, or tilted up, so that its superior articulating surface with the tibia and fibula was brought into a vertical position. This caused two prominent points—one, the outer articulating protuberance with the scaphoid; the other, the outer articulating protuberance with the calcis—to project so much as to nearly protrude through the integuments, which were drawn tensely over them, and slightly excoriated. The leg was much bruised, and cut in several places; the right ankle was also greatly contused, but without dislocation or fracture. No fracture could be recognized in the dislocated joint. I presume the posterior portion of the calcis must have struck upon the edge of one of the steps upon which he fell, by which the foot was twisted, and the particular dislocation produced.

*Attempt at Reduction of the Dislocation.*—I first made an attempt at reduction, with the assistance of three able-bodied men, but was unable to effect the slightest alteration in the condition of the parts. I next tried the effects of chloroform, but was unable to bring him under the influence of this agent; or rather, I did not push it further than I deemed prudent and safe at the time. It appeared to increase the nervous excitement; and, in fact, the general agitation of the muscular apparatus was such as to be little short of actual convulsions. I have seen chloroform produce similar effects in delirium tremens in other cases. I then resolved to resort to nauseating doses of tartarized antimony and the compound pulleys, hoping, by their combined action, to produce sufficient muscular relaxation to enable me to press the displaced bone back into its normal position. The full effects of the antimony were produced, and the pulleys applied. The full power of an able-bodied man was applied to the cord, but to no purpose; not the slightest impression could be produced. I permitted him to rest for a few hours. In the mean time Professor Geddings saw him in consultation. With his assistance, and that of my brother Dr. J. J. Robertson, of Washington, Ga., another effort at reduction was made; but it was equally unavailing. The joint was then placed in the most favourable position, and covered with an evaporating lotion.

*Progress of the Case.*—The inflammatory action ran high, and in a few days two sloughs, about four-tenths of an inch in diameter, were thrown off from the integuments over the two most prominent points of the dislocated bone. The suppuration was profuse. A considerable quantity of synovial fluid accumulated just behind the lower extremity of the fibula, extending three inches up the shaft of the bone. It was evacuated by an incision with

the lancet. The probe could be freely passed through the opening, to the extent of several inches, both above and below. The suppuration continued without any abatement, and it became evident that constitutional irritation was fast reducing the patient. The question of amputation, or an attempt to remove the dislocated bone then arose, for one or the other of the procedures was imperiously demanded. I determined, if sustained in consultation, to adopt the latter course, as affording a chance of saving the member. Professor Geddings met me again on the 8th of August, and, concurring in the propriety of attempting the removal of the dislocated bone, the next day was fixed on for the performance of the operation. The dangers consequent upon the operation, the possibility of its failure, and the necessity for ultimate amputation, were frankly and fully stated to the patient. He readily acquiesced in the attempt to save the leg.

*Operation.*—August 9, 12 M., twenty-one days from the receipt of the injury. An attempt was made to place the patient under the influence of chloroform. It produced considerable restlessness, writhing and tossing about of the arms, with incoherent muttering. Its inhalation was continued during the progress of the operation, in which I was assisted by Professor Geddings, and Drs. Fitch, Kinloch, and Anderson. A lunated incision was carried from below upwards, through the superior portions of the two openings occasioned by the sloughing of the integuments, descending and terminating in front of the external malleolus, on a level with the tendons which pass under it. The flap was dissected down and turned back. The upper portion of the integuments was turned back also. With the index finger of the left hand as a director, the tendons and anterior tibial artery were protected, and forced as much as possible out of the way; and, with a strong, narrow, straight bistoury, the connections of the bone were severed in that direction. The attachments in front were next divided, and the knife freely passed between the astragalus and calcis. The bone was now seized with a pair of Meigs's embryotomy forceps, which I had selected for the purpose, and forcibly wrenched outwards, while the remaining deep-seated attachments were severed. But slight hemorrhage took place, as no artery requiring a ligature was divided. Upon examining the bone, it was found that the posterior inner protuberance had been fractured; and, on passing the finger into the cavity, the fragments were found to be held by firm ligamentous attachments. These were removed by means of the probe-pointed bistoury and forceps. The flaps were drawn together, and secured by interrupted sutures and adhesive straps, and the whole covered with an emollient poultice. Dr. Kinloch, who administered the chloroform, was of the opinion that the patient was not fully under the influence of the anæsthetic agent. The patient stated, however, that, though perfectly aware of what was being done, he did not feel any pain, and attributed his restlessness and incoherent muttering to a consciousness of what was going on.

The adhesive straps were removed on the third day after the operation, and a portion of the edges of the flaps had united by the first intention. In the course of ten days, however, the joint became generally inflamed, with profuse suppuration. Fluctuation was felt just over the internal malleolus. It was opened, and, for some days, continued to discharge an ill-conditioned bloody pus; it then gradually closed, leaving a general tenderness over that region, which slowly disappeared.

On the 27th of August, the condition of the patient was decidedly unfavourable. The discharge from the joint was profuse, and unhealthy in character. Considerable exfoliation had taken place from the inferior end of

the fibula, and the granulations about the external wound were flabby and unhealthy in appearance. The patient was also suffering greatly from constitutional irritation; in addition to which he had become extremely emaciated. Upon further consideration we determined still to persevere, and endeavour to save the limb. Our patient was placed upon a generous diet, a pint of Scotch ale per day, and a tablespoon of the tinct. cinchon. comp. three times a day, and the edges of the wound were daily touched with argent. nit. Under this course, matters soon assumed a more favourable aspect, and his improvement was now rapid. On the 12th September, he was so far recovered as to be able to draw on a stocking and loose slipper, and take exercise with the assistance of crutches. About the 1st of October he left for his residence in a distant State, the external wound having healed to a mere point.

He was heard from on the 12th December. The external wound had entirely healed. He has good lateral motion of the new joint, and flexion and extension to a limited extent. He is able to walk comfortably with the assistance of a common walking-cane, and a shoe with the heel about half an inch higher than the other.

The foregoing statement is an extract from my case-book, in which the record was made just as the case progressed.

[Dislocation of the Astragalus is a very serious accident, and its treatment is often perplexing and difficult. It may be useful therefore, in connection with the above interesting case, to refer our readers to an instructive paper on this subject by Dr. GEO. W. NORRIS, in the number of this *Journal* for August, 1837, and also the case of Mr. J. TUFNELL, and the observations of M. BROCA, in the Summary of the present number, (see Department of Surgery.)—ED.]

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ART. XIV.—*Opium as a Remedy for Obstinate Ulcers.* By Dr. W. H. ROBERTS, late Act. Surg. U. S. A.

AN article denying the remedial effects of opium in the treatment of sluggish ulcers, was published some months since in the *American Journal of Med. Sciences*. The experience of its author being the reverse of my own, and calculated to greatly depreciate what I have found to be an invaluable remedy in old and obstinate ulcerations, I beg to give you the results of my own observations in both civil and military practice.

The action of opium, when given in stimulating doses, upon the skin and capillary circulation, would alone point it out, as a fitting remedy, in this and other diseases of the skin. This first induced me to make trial of its powers; and experience has amply justified its use. I am convinced the true value of opium in all the diseases which affect the skin, has yet to be fully appreciated.

With regard to the use of opium in chronic ulcers, I have found its effects to be greatly influenced by the absence or presence of constitutional or general derangement of the system.

In all cases that have fallen under my notice, and as far as I could learn from the experience of medical friends, the disease when purely local is readily cured by small doses of opium internally, and cold water dressings locally. Where the patient was of a scrofulous diathesis, or had been tainted with syphilis, the treatment had to be varied according to the circumstances.

Most of the cases that fell to my charge in civil practice were of the first-mentioned class, and yielded readily to the small stimulating doses of opium, together with the cold water dressings. Afterwards, in attending upon the troops, I met with scarcely a case that was purely local in its character. Among both the regulars and volunteers, ulceration of the legs was a common complaint; but, in nearly every case, it occurred upon persons either tainted with syphilis, or upon those whose constitutions had been broken by hardships, exposure, the diseases incident to the climate, and, in too many cases, by intemperate habits. In such subjects, as was to be expected, the opium used alone failed altogether, or the benefit derived from its use was only temporary.

On the other hand, no other mode of treatment was entirely satisfactory when uncombined with opium.

A synopsis of some of the cases upon my note-book will best illustrate the treatment and its effects. A minute detail would occupy too much space without giving a more accurate idea of either:—

CASE I. *January 8, 1846.*—I was called to visit Mrs. N., a young married lady, who had been confined, twelve months previously to my seeing her, with her first child. She informed me that, since her recovery, she had been continually afflicted with ulcers upon her legs. She had been treated for this complaint by several practitioners, both regular and irregular, but had derived no permanent benefit from their very numerous prescriptions.

Upon examination, I found both legs covered with ulcers in different stages of progressive formation. In some spots the skin was merely red; in others the sore had become purple; in some the cuticle was elevated, with a dark fluid beneath. The most advanced showed the true skin and cellular tissue to be sphacelated to a greater or less extent.

For the first week, I adopted the treatment usual in such cases; but with the same want of success that had attended my predecessors.

After mature reflection, I determined, for the first time, to try opium internally, in small doses, together with cold water, for the only local application. I exhibited the opium in doses of one-third of a grain three times daily. I commenced this treatment January 16. On the 21st, the sores had begun to put on a florid-healthy appearance. On the 26th, I began to lessen the quantity of opium, and, from that date, gradually discontinued its use. This was the whole course of treatment pursued, with the exception of a single dose of blue mass, followed with a Seidlitz powder, which were prescribed on the 18th. The 2d of February I paid her my last visit; since which time she has had no return of the disease.

After the return of the troops from Mexico, there was no complaint which more frequently demanded my attention than ulcers situated in the superficial

soft parts above the middle third of the tibia. Not one of these cases could be made to yield to the opium unaided by general alterative treatment.

CASE II.—G. C., a private in the volunteer battalion from Florida, went to Mexico a robust man, of about 25 years of age, of temperate habits, and he assured me he had never had any venereal complaint whatever. He suffered severely from the fevers and diarrhoea of the country. When, after his return, he placed himself under my care, his constitution, to all appearance, was completely broken. He was anæmic and emaciated, without appetite, and, his mind having become despondent, he had begun to despair of a cure. He placed himself under my charge to be treated for ulcerated legs, which, he said, were brought on by a local injury in the first instance, and had been aggravated by his ill-health, and still more by some of the local applications he had been induced to use. For two weeks I pursued in vain the treatment I had found so beneficial in Case I.

November 14, 1848. I ordered him to have one grain of sulph. quinia four times daily, with an ounce of the following: *R. Sarsaparillæ rad. ʒij; muriat. ammoniæ ʒij; aquæ fervent. Oj.*

The opium was discontinued, and his legs dressed with cold water as before.

29th. His general health had greatly improved; his appetite had also returned. I resumed the opium treatment, but continued his other medicines as above.

December 4. The ulcers began to look healthy, and from this time continued to heal rapidly until the 24th, when the patient considered himself well able to resume his occupation as a waterman.

CASE III.—A private in the 4th artillery came into the hospital with ulcerated legs soon after his return from Mexico. This man's constitution had been injured by syphilis, though, when admitted, his general health appeared to be good. In this case, also, I endeavored to heal the sores with stimulating doses of opium and cold water applications locally; and, as in Case II., I totally failed. After ten days' trial without any good result, the opium,  $\frac{1}{4}$  grain, was combined with 1 grain mass hydrarg., to be given three times daily. Local applications (cold water dressings) continued. This treatment, with occasional exhibitions of tincture of iron, and Lugol's solution of iodine, was continued for three weeks with marked benefit. At this time the patient no longer kept his bed, and the ulcers were granulating as rapidly as I wished, when, at the man's urgent request, I was induced to discontinue the opium. During the four days of its discontinuance the old sores made no further advance towards healing, and two purple spots indicated a reinforcement to their numbers. I at once resumed the use of the opium, which produced its usual effects. Two weeks after, the man returned to his duties; and though in this case, owing to the exciting cause, the relief may prove to be but temporary, still it is relief, and not to be despised, however brief may be its duration.

Numerous cases similar to those I have selected, has given me a strong faith in the curative properties of opium in these and similar affections. Nor do I rely solely on my own experience. Men of careful observation and sound judgment have assured me that it has proved of great value in their practice.

ART. XV.—*Medical Notes on the Wreck of the San Francisco.*

By WM. P. BUEL, M. D., Surgeon of the Steamer.

THE San Francisco was one of the largest class of sea steamers, falling very little short of the largest of the Collins steamers. She had accommodations which would have enabled her, when unincumbered by freight, to berth 1,400 passengers, besides the necessary accommodations for her officers and crew. When she proceeded to sea, on the 22d of December, she had, all told, but 750 souls on board, divided as follows:—

Officers and soldiers of the 3d Artillery . . . . .	550
Females and children connected with the above . . . . .	100
Officers and employees of the steamer in different departments, sailors, engineers, firemen; coal-passers, stewards, cooks, and waiters . . . . .	100
Total . . . . .	750

The steamer was so filled with freight of different kinds, the coal necessary to carry her to Rio (of course, a very large amount), provisions for such a number of troops, military stores, baggage, &c., that, of this small number, small in comparison with the capacity of the vessel, less than one-half could be accommodated below; 400 of the soldiers had to be berthed on the main deck of the steamer, in temporary standee berths.

With some trifling exceptions, all on board were in good health at the time of departure. There was one case of varioloid among the troops, but, as they had all been vaccinated previous to the embarkation, the disease was communicated to only a single individual. The children of one of the officers were affected with measles. There were among the troops some slight cases of venereal affections. All the rest were in excellent health. About one-half the command were recruits, but they had been selected from the whole number at the recruiting depot on Governor's Island, as possessing the best *physique*, and perhaps the best *morale* of the entire number.

I presume most of the persons on board took their departure with higher hopes and more pleasurable anticipations, than is usual for those who bid adieu for the first time to their homes and native land. Embarked on a splendid steamer, fitted with every convenience, and supplied with every kind of stores necessary for their comfort; surrounded with gay and light-hearted companions; bound for a land which fancy had painted in golden colours; they anticipated a voyage of pleasure.

After the wreck, which took place on the night of the 23d and morning of the 24th of December, the total number of souls on board was reduced to 620. About 130 were at that time washed overboard, and found a watery grave. The condition of the survivors, morally and physically, was such as might naturally be expected to terminate in disease and death. Numerous causes

were in operation pregnant with such results. Among some of them were the following:—

1. MORAL CAUSES. *The Depressing Passions—Fear, Anxiety, and Suspense.*—For the first three or four days after the wreck, the probability that the ship would go to the bottom at any moment, was sufficiently strong and imminent to intimidate even the coolest and most courageous. The timid and faint-hearted were completely panic-stricken. Many of this class abandoned themselves to despair. They fell easy victims to the pestilence which invaded us after a brief interval.

2. PHYSICAL CAUSES. *Over-crowding and Want of Ventilation.*—Of the 400 soldiers who, previous to the wreck, had been quartered on the main deck, all those who survived the storm were driven below. Including those previously berthed there, they made up an aggregate of 500 men, women, and children, crowded into quarters never designed for more than 200 to 250, and barely sufficient for that number. The ship was amply provided with the means of ventilation in good weather. Numerous airports, of an unusual size, opened along the sides of the vessel, which, in ordinary weather, would have admitted abundant supplies of pure air to every part of it. But, with the heavy and tempestuous sea that prevailed almost constantly, these could not have been opened a moment without endangering the vessel. The lower second cabin, occupied by the wives and children of the non-commissioned officers and soldiers, was more completely cut off from the external atmosphere than any other portion of the ship, and it was here the pestilence commenced and was most destructive.

*Cold and Wet.*—From and after the storm, the ship was continually wet; the beds and bedding were never dry. The cold was at no time intense, but it was sufficiently severe, with the dampness, to act as a cause of disease.

*Insufficient and Unwholesome Diet.*—The roll of the ship, caused by the tremendous sea that prevailed for several days after the wreck, was such that fires could not be kept up in the galleys, nor could provisions or water be retained in the boilers. In consequence, little but uncooked food could be issued. Cold water, hard biscuit, and raw pork, were all that could be furnished to the majority of those on board. In addition to these, some of the soldiers, and perhaps others, gained access to the preserved meats, vegetables, and fruit laid in for the cabin passengers, and probably indulged to excess. This exciting cause was, however, confined to a limited number, as I ascertained, by careful inquiry, that those first attacked had taken no food but hard biscuit, and no drink but water, except that some had mingled with it vinegar or molasses, under the impression that it would thereby be rendered less hurtful. Thus it appears that, on board the *San Francisco*, there were in active operation all those influences which everywhere, and under all circumstances, tend invariably to the production and development of disease in the human system. Either of them singly is often sufficient, and, where all were combined, malignant and fatal disease was the unavoidable consequence.



In camps and in military hospitals, in prisons and in crowded emigrant vessels, in our own and in other lands, these pestiferous agencies have written their own history in mournful characters.

The exact character of the disease which shall be produced, varies with the varying circumstances of the case, and with the particular character of that inscrutable agency, which, to cloak our ignorance, we invest with the name of "*epidemic influence*." Sometimes it has been erysipelas; sometimes, dysentery; more frequently, in other years, it has been typhus; recently, it has been apt to assume the livery of that fearful pestilence which decimates cities, and wraps the nations in mourning—Asiatic cholera.

On board those crowded emigrant ships which daily land on our wharves, by hundreds and thousands, the redundant population of European countries, malignant cholera has prevailed extensively and fatally during the past year. Precisely the same agencies which, in previous years, filled these ships with fever patients, have, during the last, in many instances, decimated the whole ship's company by cholera. No reason can be assigned for this, save the one alluded to above—the prevalence of an influence favouring the one result rather than the other.

It has been observed that, with much regularity, disease begins to manifest itself in these vessels about five or six days after leaving port. This has been the case to such an extent, that it has been imagined that, about the distance from land which would be run over in that length of time, these unfortunate vessels enter upon a zone or cycle of the ocean, the atmosphere of which, poisoned by a pestiferous influence, hatches into existence this brood of disease and death. This is an hypothesis too fanciful to need serious refutation. It is obvious that the human system is endued with a certain power of resistance against those morbid agencies which generate disease. There is to all diseases a period of incubation; distinct and definite in the exanthemata, less so, but still well marked, in fevers and other diseases. This period of incubation sufficiently defines the period of the development of disease in emigrant vessels.

I have been led into these remarks by the fact that, when the cholera manifested its existence on board the *San Francisco*, that vessel had been about seven days out of port, between five and six of them subsequent to the wreck. Thus, the incubation period corresponds almost exactly with that of the emigrant ships.

The SYMPTOMS were identically the same with those, unfortunately, too well known as everywhere accompanying malignant cholera. Serous diarrhœa and vomiting, spasms, collapse—death. What need of further description?

The first cases appeared in the lower forward cabin. This was the part of the ship most crowded with inmates, and most completely deprived of ventilation. It was occupied by the wives and children of the non-commissioned officers and privates of the regiment. Long narrow state-rooms, twelve feet in depth, ran athwart ships on either side. Each state room had in it twelve

berths, and the floors were covered with the sick. Each of these rooms formed a perfect *cul-de-sac*. The air-ports opening into them on the vessel's side were of no avail; the violence of the sea forbade their being open for a moment. The atmosphere in these long, narrow rooms, crowded with sick and dying—where all ventilation was entirely impossible, was pestilential in the highest degree.

Just forward of the forward cabin, there was an apartment smaller in size, but similar in plan, which was designed, in the arrangements of the voyage, for the military hospital. By knocking away the bulkhead, which separated them, the two had been thrown into one, and were so, to all intents and purposes. Here was the focus of intensity, and here the maximum of mortality of the disease.

Still further forward lay the steerage, occupied by privates of the regiment in open berths. It communicated with the external air by a large hatch opening immediately upon the main deck. It was, consequently, to a certain extent, ventilated. The sickness and mortality here were great, but considerably less than in the forward cabin.

The main saloon, or after cabin of the ship, was a large, spacious, open apartment. It was occupied, after the wreck, in part as a sleeping apartment for the officers of the army and of the ship, and in part as a guard-room for the soldiers. It was less densely crowded than the forward parts of the ship, and there were here comparatively few cases of severe disease.

*Treatment and its Results.*—As nearly all the medicines on board, both those belonging to the ship and those composing the Army Medical Stores, were either destroyed by the storm or thrown overboard, in the attempt to lighten the ship after the wreck, the extent of medical agents which could be brought to bear upon the disease was exceedingly limited. Opium, brandy, capsicum and mustard, and these in limited quantities, were all. They were successful, in many cases, in controlling the preliminary diarrhœa; but after cholera was freely established, they were for the most part wholly powerless.

The forward cabin, already described, constituted the focal point of the pestilence. Almost every case which occurred here, went straight on to a fatal termination, entirely unchecked by remedies. Those occurring in the saloon, and in the steerage, were less malignant, and many of them recovered.

*Mortality.*—The wreck of the San Francisco occurred on the night of Friday, the 23d, and morning of Saturday, 24th December. On Wednesday the 29th December, about one hundred of those who survived the storm and wreck were taken off by the barque Kilby. It is somewhat remarkable that, among the rescued of this company, though they suffered many hardships, and were on short allowance, both of food and water, no death occurred. There were some cases of diarrhœa, but none fatal.

On Thursday, Dec. 30, the first cases of cholera occurred. During the six or seven days, which intervened between this date and the transfer of all the survivors to the ships Three Bells and Antarctic, on Wednesday the 5th and

Thursday the 6th Jan., the deaths in the San Francisco amounted to about sixty. At the time of the transfer, from thirty to thirty-five were in a dying condition, or very low. Of this number, fifteen perished on board the *Three Bells*; sixteen or seventeen on board the *Antarctic*.

Of the seven hundred and fifty persons who embarked on the *San Francisco*, full of life and hope, about one hundred and thirty were washed overboard and drowned on Saturday morning, December 24; ninety perished with malignant cholera; the survivors, about five hundred and thirty in number, after many perils and vicissitudes, extreme hardships and privations, a portion of them after two winter voyages across the Atlantic, succeeded in reaching New York in safety.

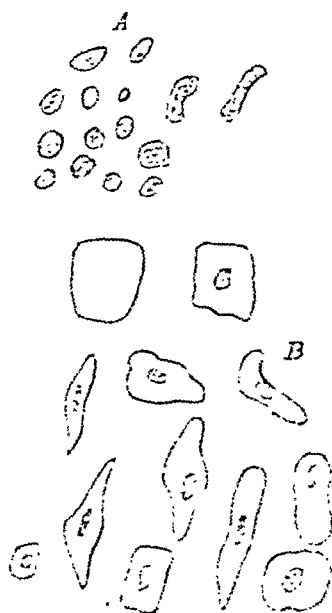
ART. XVI.—*Vaginal Discharges examined with the Aid of the Microscope.*

By LUTHER PARKS, JR., M. D., of Boston. (With two wood-cuts.)

I HAVE had two opportunities of inspecting, microscopically, vaginal discharges in the living subject, the results of which I here give.

In an inconsiderable quantity of sero-mucous secretion from the vagina of a patient, immediately after the close of menstruation, Nov. 3, 1853, were

Fig. 1.



sero-mucous, or pus-globules, like A, Fig. 1, and epithelium scales, like B, Fig. 1. A few months previously I had removed a glandular polypus, of small

size, from the cavity of the cervix uteri of this patient. The os and cervix uteri were now found in an apparently healthy condition.

Leucorrhœal discharges from another patient, taken Nov. 22d and 23d, 1853, gave similar appearances.

Having obtained a uterus with a portion of the vagina attached, from the dissecting-room, through the kindness of Dr. Hodgès, I proceeded to its examination, with the following results. Within the canal of the cervix, and partly emerging from the os, was a mass of transparent tenacious viscid fluid, a portion of which I removed, *avoiding contact with the neighbouring parts*. Placing this under the microscope, I beheld a large number of mucous, or pus-globules, like Fig. 1, A, and a few like A, Fig. 2.

Having laid open the cavity of the womb, and scraped from its inner surface, at about the centre of the posterior wall, a turbid fluid, I found the field to be filled with mucous, or pus-corpuscles, similar to A, Fig. 1, and A, B, Fig. 2. B, Fig. 2, represents the only specimen of the kind I saw.

The above-mentioned masses of glairy fluid having escaped from the os, lay in contact with the vagina. This I removed and placed under the glass, when I saw in it mucous, or pus-globules, A, Fig. 1. In addition, were a number of epithelium scales, B, Fig. 1.

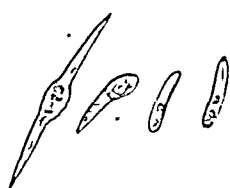
An opaque fluid having been scraped from the upper part of the vagina, below the os uteri, showed an abundance of epithelium scales, with a minor proportion of mucous, or pus-corpuscles, A. A specimen from the lower part of the vagina seemed to contain a still smaller proportion of the mucous, or pus-corpuscles. A mass scraped from the outer surface of the cervix uteri, near its junction with the vagina, consisted of epithelium scales like B, Fig. 1, with few or no small globules, like A.

A second specimen, taken from the cavity of the uterus, near the left Fallopian tube, was similar to the previous specimen from the centre of the uterine cavity.

We find, then, from these observations, that the secretion of the vagina, and of the exterior of the cervix, consisted mostly of epithelium scales, while those of the cervical canal, and interior of the womb, contained small globules—mucous or pus—of an entirely different appearance. We also saw that, in the vaginal secretion taken just below the os uteri, there was an admixture of globules, like those seen in the secretion from the uterus; and that, in a specimen taken from the lower part of the vagina, the proportion of mucous or pus-globules was smaller, this proportion being also reduced nearly or quite to zero, in the mass scraped from the exterior of the cervix uteri. We may infer, then, that the mucous or pus-globules seen in the masses, scraped from the vagina, came from the uterus, and that while these are peculiar to the lat-

Fig. 2.

B A



ter, the epithelium scales belong to the former. We may thence also presume that the discharges taken from the living cases were composed of an admixture of uterine and vaginal secretions.

In none of our observations did we see any of the ciliated epithelium described by Dr. Tyler Smith, though in A, Fig. 1, are two corpuscles which may possibly be specimens of the cylindrical epithelium mentioned by him. These observations, as far as they go, lead me to the inference that the epithelium occurring occasionally in fluid taken from the cavity of the cervix (as described by Dr. Tyler Smith, in his admirable paper on the microscopical examination of the cervix uteri), are, as partly suggested by Dr. Smith, obtained by contact with, or imbibition from, the vagina.

I will add that the preceding investigations were made before I had seen the paper of Dr. Smith, which I received through the Messrs. Ticknor, December 14, 1853.

## REVIEW.

ART. XVII.—*Pneumonia: its supposed Connection, Pathological and Etiological, with Autumnal Fevers; including an Inquiry into the Existence and Morbid Agency of Malaria.* By R. LA ROCHE, M. D., Member of the American Philosophical Society, of the American Medical Association; Fellow of the College of Physicians of Philadelphia; Corresponding Member of the Imperial Academy of Medicine of Paris, etc. etc. Philadelphia: Blanchard & Lea, 1854. 8vo. pp. 502.

WHILE in almost every other department of pathology, our knowledge has, within the last few years, been rapidly progressive, in that of etiology it can scarcely be said to have made any advance since the commencement of the present century.

Facts, it is true, have been accumulated, and divers theories, in relation to the efficient cause of many of the more prominent maladies, have been broached; but when we examine and analyze these facts, we find them to be, often, but carelessly or imperfectly noted, and derived, in the majority of instances, from such limited fields of observation as to form no solid basis for the general deductions attempted to be founded on them.

The subject of etiology is, confessedly, one of great difficulty, and it may be expected to remain involved in doubt and uncertainty until we shall have it in our power to determine the precise conditions under which the several forms of disease are found invariably to prevail. This can only be attained by the collation of full and accurate series of medical statistics, running through many consecutive years; collected amid communities inhabiting the various climates and geological formations of the earth's surface, and studied with especial reference to the condition of each locality—its topography, and meteorological phenomena—the seasons of the year, the ratio of population, the food, clothing, and habitations, together with the political, moral, and social condition and pursuits of the people, as well as the state of the industrial arts in each community.

Since the period when the attention of physicians was first especially directed to the influence of paludal exhalations as a fruitful source of disease, by the work of Lancisi, there has been a constantly increasing tendency with etiologists to ascribe almost all the fevers and febrile affections to a supposed toxical agent, exhaled under the modifying influence of certain contingent influences—heat, humidity, etc.—from organic substances during the process of decomposition. To the morbid agency of the miasm or malaria thus generated has been referred, not only all the forms of what have been termed essential fevers, but also diarrhœa, dysentery, cholera, rheumatism, neuralgia, and even the purely local inflammations of many of the internal organs. There is, in fact, a disposition to constitute this miasm or malaria the one sole cause of nearly all diseases, especially those of an endemic or epidemic character.

“The idea of a close connection, as regards both causation and nature, between thoracic inflammation and malarial fevers of various grades and types,

has long been entertained, and continues even now to be advocated by writers of respectable standing. Casually suggested or openly avowed and sustained, at various periods, by professional authorities on the other side of the Atlantic, it has met with especial favour in this country, particularly in our Southern and Southwestern States, where it, at present, enlists many warm and uncompromising defenders."

To demonstrate the fallacy of this singular etiological doctrine is the object of Dr. La Roche in the work before us. To present an abstract of the leading facts that bear upon the question at issue, derived from reliable sources in various sections of the globe, as well as from the results of his own personal observation, and, by a careful analysis of these, to show that the supposition of the identity, etiological and pathological, of pneumonia and autumnal fevers, is founded on insufficient or incorrect data, and is, in fact, little more than a dream of the imagination, is the task assumed; a task which it will be admitted, we think, by all who are open to conviction, has been most satisfactorily accomplished.

In addition to this, his leading object, Dr. La Roche discusses also the question of the existence and morbid agency of malaria in the production of autumnal fevers, with the view to prove that etiologists who regard these fevers as the result of particular poisons floating in the atmosphere of specific localities, have just cause for entertaining that belief.

That the facts adduced in this portion of the work clearly establish the main position assumed by the author—the existence, namely, of a specific aerial poison as the cause of autumnal fevers—will admit of very serious doubt. The leading observations in relation to the general condition of those localities of which fevers are endemic, are it is true very fairly and fully presented. Dr. La Roche has certainly collected a large amount of valuable information in respect to this important subject from the most reliable sources—many of which have never been explored by the mass of the profession. But with all the research he has manifested, and the skill he has displayed in arranging the materials accumulated, we cannot admit that he has succeeded in demonstrating the existence of a specific aerial poison, derived, under the modifying action of certain contingent influences, from organic substances during the process of decomposition, as the morbid agent in the production of autumnal fevers. Admitting the truth of all the leading facts adduced by Dr. La Roche, and we are not prepared to invalidate in the slightest degree either of them, still, the question as to the existence of the supposed specific febrile poison appears to us to remain as open as ever to dispute.

The examination of the connection assumed to exist between pneumonia and autumnal fevers is the subject of the first chapter, and of the last three; while in the second, third, and fourth chapters the question as to the existence and morbid agency of malaria is discussed.

Singular as it may appear, remarks Dr. La Roche, to modern etiologicals and pathologists, that the connection as regards both causation and nature, between thoracic inflammations and autumnal fevers should have been made the subject of serious consideration by our forefathers, and still more so, that it should receive the sanction of physicians of the present age, it requires but a slight acquaintance with the medical literature of past and present times to be aware of the fact. To prove this, a few references are made to the writings of well known preceding and contemporary medical authors:—

"The reader will easily perceive," says Dr. La Roche, "that, before the advocates of the identity of the two diseases can successfully sustain the position they have assumed, it will be necessary for them to show that autumnal fevers

and pneumonia are produced by the same causes; that they prevail in the same places, and during the same seasons of the year; that their existence and diffusion are promoted by the same agencies; that they are arrested by similar means; that they exercise their effects on the same classes of individuals; that they present similar or kindred symptoms; that they affect the same organs, and produce the same or analogous changes in the fluids and solids; that they are governed by the same laws, and that they present other points of approximation invariably found to be possessed by diseases between which there exists the close connection claimed in the instance before us. Unless they can succeed in attaining these objects, their opinion must fall, and the independence of those diseases be admitted. It becomes necessary, therefore, to take up each of those subjects separately, and to ascertain how far they may be appealed to in respect to the question at issue."

The author adduces a series of observations to show, first: That pneumonia is of common occurrence in situations where fevers seldom or never are seen; 2dly. That pneumonia is not necessarily prevalent where fevers are prevalent; 3dly. That the two diseases prevail in different seasons:—

"As the name usually affixed to malarial fevers indicates, the latter is, in our latitudes especially, a disease of autumn. It seldom appears before the middle or close of summer, and ceases on the accession of winter. Its existence in an epidemic form in temperate regions, is never known to occur in the spring of the year; cases that occur in that season, or in winter, being accounted for without having recourse to the supposition of the development then of the efficient cause. It never shows itself in winter, and if it appear early in summer—which is seldom the case—the occurrence is only noticed under peculiar circumstances of atmosphere existing during the preceding months, and which invest these with the characteristic conditions appertaining to autumn. It is emphatically a disease of hot weather, requiring for its production a continuance for some time previous of high atmospheric heat. It appears, generally, some weeks after the hottest month; the period being retarded as we proceed north. For the same reasons it may readily be understood to be a disease of hot latitudes, prevailing, as it does, violently and almost perpetually within the tropics, and ceasing long before we reach the polar circle."

"If we now turn to pneumonia, we shall find that the period of its prevalence is very different from that of the disease just referred to. Hippocrates some three thousand years ago, and Aretæus after him, pointed out the winter as the season in which the disease manifests itself most commonly, and subsequent writers have generally united in that sentiment. Sydenham, it is true, and after him the learned commentator of Boerhaave, affirmed, as the result of their observations, that the disease attains its maximum between spring and summer. But the statement has not always been confirmed by subsequent authorities in this country and Europe."

"Everywhere, among adults, children, and old people, idiopathic or primary pneumonia appears to attain the maximum of frequency at the close of winter and in the spring, especially during the months of March and April. Next in point of frequency is the winter; while the disease, though not unknown in summer, is comparatively of rare occurrence during that season, and perhaps still more so during the autumnal months."

4thly, the author shows that the two diseases appear under the influence of opposite winds:—

"So far as regards malarial fevers," remarks Dr. La Roche, "not a little in this matter will depend on the nature of the surface over which the wind may happen to pass before reaching the locality where the disease prevails; for at the proper period of the year, other things being favourable, fever will appear in connection with any currents which waft the air from neighbouring surfaces where the elaboration of the morbid cause is going on. But, however true it may be, that particular currents of wind exercise a baneful influence in the



way mentioned, it is not less a fact, which experience will everywhere confirm, that the existence of malarial fever has almost invariably been connected, in temperate regions particularly, with the prevalence, during a greater or shorter space of time, of southerly currents, and that the influence that these exercise is not necessarily, and in some forms of the disease is very seldom dependent on the malarial nature of the localities over which they happen to pass. Nor could this well be otherwise, for these fevers require for their development the long continuance of a range of thermometrical heat, which could seldom be obtained during the prevalence of opposite currents. Now, how do matters stand in that respect as regards pneumonia? If in some localities, as at Gibraltar, for example, the disease prevails most usually during those periods of the year when westerly winds are predominant—if the disease, also, is found to occur more frequently in other places under the influence of different currents, it may be laid down as a general rule, that north, northeast, and northwest winds are those during the prevalence of which thoracic inflammations are more frequently developed. Such was found to be the case in the north of Italy and Germany by J. Frank. *Le Pecque de la Cloture made similar observations in Normandy, as did also Hourmann and Dechambre, and Grisolles at Paris.* “Similar results have been noted in England, in Nova Scotia, and Bermuda; and it can scarcely be necessary to add that in this country pneumonia is almost invariably associated with the prevalence of northerly currents—N. N. E., N. W., or west.”

It is shown, 5thly. That while pneumonia is of yearly occurrence, this is not always the case with fevers even in those localities of which they are the especial endemic; 6thly. That the altitudinal range of the two diseases is not the same—autumnal fevers being the endemic of valleys, plane surfaces, the banks of streams, lakes, and other depressed localities, while they very commonly spare high and well-aired situations. On the other hand, pneumonia, though not a stranger to low grounds, valleys, and similar situations, prevails as widely, if not more so, on mountains, hills, and other elevated places. 7thly. That fevers are influenced by the nature of the soil, which is not the case with pneumonia. 8thly. That fevers are arrested by frost, but not so pneumonia—this being even increased in point of frequency by the very thermometric change which puts a stop to the occurrence of autumnal fevers.

It would be impossible to present a satisfactory analysis of the numerous observations adduced by Dr. La Roche from the professional experience of the medical writers, as well of the past as of the present time, in support of each of the above propositions. These observations are in general well selected and apposite. Occasionally the author may, it is true, be accused of having overloaded the subjects discussed by the multiplicity of his references; nevertheless, all the facts he has enlisted in the argument are replete with interest, and deserve a careful perusal and candid consideration on the part of all who desire to judge clearly of the differential etiology of what have been denominated the essential fevers and pulmonary inflammations.

Passing by for the present the three chapters devoted to the subject of malaria, we arrive at the fifth chapter of the treatise. In this, pneumonia and autumnal fevers are compared in reference to their causes, mode of progression, symptoms, anatomical characters, and the circumstances by which they are influenced.

The difference in the causes by which the two diseases are respectively produced is clearly indicated.

“We have seen,” says Dr. La Roche, “in a preceding chapter, that the prevalence of malarial fevers, of various grades and types, is restricted within certain localities; that in many instances, the area of those infected places is very limited in extent; that while the disease prevails in one spot, individuals who

reside at a short distance, and abstain from visiting that spot, escape; that by removing from one part of the same city to another not far distant, or from one end or side of a house to another, or from a lower to a higher story, the disease may be avoided; that ships, by shifting their position from one part of a sickly port or shore to another close by, are often found to lose the fever, from which, before the change, they had suffered severely. We have seen, on the other hand, that in certain localities, the crews of vessels that had been exempt from fever so long as they remained at only a short distance from land, were attacked, sometimes to a man, as soon as they ventured ashore; and that individuals who had enjoyed good health while avoiding infected city or country localities, were attacked with an almost unerring certainty, in consequence of visiting or passing through them. Now, the physician who should undertake to collect facts to prove that the sphere of prevalence of pneumonia is as narrowly circumscribed as it is sometimes found to be in fever, would have an ungrateful task to perform. We nowhere hear of this disease attacking a large number of the residents of a limited spot, of a part of a house or street, and leaving every one in the close vicinity of that spot, in the next street, or in the adjoining houses, perfectly unscathed. Nor need we fear to predict that the medical writer who ventures on the assertion that pneumonia has frequently been observed to attack the occupants of the lower rooms of houses, or the basement wards of an hospital, and to scrupulously respect those who dwell above; that all the inmates of one end of an asylum, hospital, prison or house, have been struck down by inflammation of the lungs, while those occupying the other parts of the same building have remained untouched—and that, too, not during one season, but during a succession of seasons—will run great risk of giving but an unfavourable opinion of the authenticity of his facts, or the soundness of his judgment. We do not hear of the crews of ships ridding themselves of the disease in question, by shifting their position, and anchoring at the distance of a few dozen yards; or of vessels, which before had been healthy, becoming by a reverse change, or the removal of an intervening ship or other object, suddenly visited with the disease. Neither do we find a large number of instances on record of vessels which were free so long as they remained under sail, or at anchor at a short distance from an infected shore, being filled with pneumonic cases the moment they approached close to the land, or sent their boats to explore the mouths of rivers, &c.; or, again, of scores of individuals, who had remained healthy while residing at a short distance, being attacked with pleurisy or pneumonia in consequence of jumping over the barricades, and promenading about the streets of an infected spot."

After referring to the fact, that those means by which the condition of a locality may be so far changed as to put a stop to the prevalence there of fevers have no such salutary influence in respect to pneumonia, Dr. La Roche proceeds to point out the difference there exists between the distinctive symptoms and pathological conditions of pneumonia and malarial fevers. This difference, showing that, if we admit an intimate relationship, in cause and nature, to exist between the two diseases, we must admit, also, that from one and the same morbid agency are produced diseases differing widely in their symptoms, march, and anatomical characters.

In thus indicating the general purport of this portion of the essay before us, we have, we admit, scarcely done justice to the manner in which the author has treated the several important particulars in reference to the etiology and pathology of autumnal fevers and of pneumonia that are discussed in it. Our aim has simply been to indicate to our readers the general scope of the author's arguments to disprove the presumed identity between autumnal fevers and thoracic inflammations. The entire chapter is deserving of a careful perusal, comprising, as it does, much valuable matter, collected with commendable industry, and faithfully and clearly presented. In the section which treats of the causes of pneumonia will be found a series of interesting observations

in relation to the particular conditions under which inflammations of the thoracic organs are most liable to occur.

In the sixth chapter, pneumonia and autumnal fevers are compared in reference to the power of acclimatization and the ages, sexes, and races of those most subject to be attacked.

Dr. La Roche shows that the exemptive power of acclimatization does not extend to pneumonia, though well marked in respect to the various forms and grades of autumnal fevers.

In regard to the liability of different races to the two diseases, it is shown, that while the negro is, to a greater or less extent, exempt from autumnal fevers, he is as subject as the white to attacks of pneumonia, if, in fact, not more so.

"We are scarcely less justified," Dr. La Roche remarks, "in seeking for proof of dissimilarity between the two diseases in the difference of liability to each of the two sexes. As regards pneumonia, males may furnish generally a larger number of cases than females, and the disease in them may assume frequently its most severe character. But there are facts sufficient on record to warrant the conclusion, that this greater prevalence of the disease in the first-mentioned sex is not the result of an inherent susceptibility, but is due, when it occurs, to a series of fortuitous and modifying causes, more particularly to the circumstance that males—owing to the nature of their avocations and mode of life—are usually more exposed than females to the causes of pulmonary inflammation; and that in places where exposure is equal in both sexes, the disease manifests itself as frequently in one as in the other. On this subject, statements, for which we are indebted to Grissolle, Chomel, Williams, Valliex, and others, can leave no doubt on the mind of the unbiased inquirer, so far as regards Europe. For, besides that, in rural districts, where women are as much exposed as men, the disease does not manifest itself more frequently in one sex than in the other; in prisons, for example, where the material conditions of life are similar for all the inmates, the number of females attacked equals that of males. Nor should it be forgotten, that among children, who are exposed to the same influences, the disease has usually been found to bear with equal severity on the two sexes. Similar observations have been made in this country and elsewhere.

"In regard to malarial fevers of various grades or varieties, from the simple intermittent to the deadly and malignant yellow fever, we arrive at different conclusions. In these males, excepting in some epidemics mentioned by Musgrave, Catel, Rutz, and under circumstances of a special kind, are more frequently affected than females; and, as a general rule, it may be stated that, when these are attacked, they have the disease in a milder form. That this comparative immunity on the part of females may, in some measure, be due to their more temperate habits, and to their being usually less exposed to the deleterious influence of night air, or, perhaps, as is presumed by Copland, to the state of the female constitution, during the period of uterine activity, is doubtless true; but it is equally certain, that, after making every possible allowance for the efficiency of these causes of resistance, we still find enough to convince us that females are far less obnoxious to the impression of the febrile poison than individuals of the other sex."

A difference of susceptibility to the two diseases, at different periods of life, is next adverted to. Thus, while the young and old are comparatively little amenable to the influence of the causes productive of autumnal and periodic fevers, pneumonia is in them a very frequent disease.

The well-known effects of the depressing passions and emotions, as well as of anger and of other of the exciting ones, as predisposing and exciting causes of fever, and their inoperativeness in the production of an attack of pneumonia is pointed out as another evidence of the difference between the two diseases.

The prevalence of fevers and pneumonia at the same time, and in rapid succession, upon which much stress has been laid as an evidence of their intimate relationship to each other, furnishes, as Dr. La Roche shows, no support to the doctrine attempted to be based upon it.

"Already, in the opening chapter," he remarks, "attention was partially called to this circumstance, and enough was perhaps then said to justify the inference, that nothing favourable to the idea of the identity of pneumonia with periodic fevers could be made out of the fact that the two diseases coexist, or that the former succeeds to the latter. It was there remarked that inflammation of the lungs prevails very extensively in places where remittent, intermittent, and other fevers of kindred nature are not observed, that it shows itself usually at seasons of the year when, if the ordinary causes of fever had at any time exercised their influence, they have been effectually or temporarily removed; that in places where periodic fevers prevail during a certain period of the year, they are put a stop to, in all their varieties, by frost. It was shown that while fevers are thus arrested, pneumonia, which had coexisted with them, instead of disappearing also, continues to prevail as it did before the accession of frost, or even is observed to spread more extensively; and that as the cause of the fever had thus been destroyed—as proved by the entire absence of its legitimate effects—the cases of pneumonia which continue to show themselves after the accession of frost, cannot be referred to the morbid agency of the cause in question, but are due to the operation of some other morbid influence, over which frost exercises no control, and differing, consequently, from the former. It was stated that the same causes which give rise to pneumonia *after* a stop has been put to periodic fevers by frost, must be similar to those that produce the disease *during* the prevalence of those fevers and anteriorly to the occurrence of frost. It was, moreover, argued that, if the cause which produces pneumonia *after* that event must, for reasons stated, differ essentially from that occasioning the fevers thus arrested in their course, the cause giving rise to the cases that appear *during* the fever season, must also be different from the febrile poison; that hence, when the two diseases show themselves together, two sets of causes are at work; that from this difference of cause we have reason to infer the existence of a difference in the nature of the diseases produced; and that when pneumonia, in the regular succession of the seasons, follows on periodic fevers, after the accession of cold or frost, or at the period of atmospheric vicissitudes, it is not influenced in its production by the cause of those fevers. It appears, therefore, as the effect not of a gradual change from one form to another of the same complaint, but as the result of the creation of a different, or the continuance of an independent disease."

The chapter closes with a reference to the non-convertibility of pneumonia and autumnal fevers.

To understand the full force of the argument adduced from the non-convertibility of the two diseases, it is necessary to have a clear understanding of what is understood by the term convertible diseases. Is it intended to convey the idea of an actual change of one malady into another? or of the modification, in the course of a disease, of certain of its phenomena and the development of others, in consequence of which its characteristics become changed? or, is all that is meant merely the change *from* one disease *to* another?

The fact of the coexistence and succession of any two diseases furnish no evidence of their convertibility and consequent identity in the two first-mentioned senses. Fevers of an intermittent and remittent type may with propriety be adduced as examples of truly convertible diseases.

"Under much variety of aspect, as is remarked by a most eminent writer of this country (Dr. Drake), these fevers 'possess many deep-seated analogies and identities; they frequently change from one type to the other. Thus, an intermittent turns into a remittent, and the latter, assuming the type of the former,

is often seen to become, first a quotidian, then a tertian, and finally, a quartan. A simple intermittent may, in the third or fourth paroxysm, take on the character of a fatal congestion; and that which began with an aspect of malignity, sometimes emerges into simplicity and mildness; vernal agues attack those who, in autumn, had suffered under remittent fever, not less than those who had experienced the intermittent form; the sequelæ of all the varieties are almost identical; the same treatment, with certain modifications, is applicable to the whole." Surely," Dr. La Roche remarks, "nothing of this kind is observed to occur in reference to many diseases, the identity of which is insisted upon on the ground that they coexist together, or follow each other in the same locality. The yellow and common autumnal fevers, though kindred zymotic diseases, and arising from malarial exhalations, are not, strictly speaking, convertible, though cases occur which exhibit symptoms characteristic of both, and the diseases may either blend together, or appear in rapid succession in the same subject. Remittents or intermittents never change into yellow fever, and *vice versâ*; their anatomical characters and sequelæ are not the same; those attacked with yellow fever in the autumn, are not affected with ague the following spring, and the aspect of the two diseases are not the same. In a word, they do not possess deep-seated analogies and identities similar to those existing between the various forms of ordinary paludal fevers. Still less allied to autumnal fevers in those respects, are typhoid or typhus fevers, and true Oriental plague, which, under the fostering hands of some unitarian pathologists, have been admitted into the family of periodic marsh miasmatic fevers, there to keep company with yellow fever, Asiatic cholera, typhoid pneumonia, to say nothing of phrenitis, gastritis, gastro-enteritis, hepatitis, and, for aught I know, peritonitis, cystitis, tonsillitis, nephritis, gout, rheumatism, and the rest of the forty or fifty different varieties of diseases into which, as we are told, the nosology of southern fevers might be arranged, and which constitute so many links in the chain of morbid action, extending from a septenary ague up to the most violent and fatal form of yellow fever. At a still greater distance, in these same respects, from autumnal fevers do we find pneumonia. So far as I am aware, the physician is yet to be found who has discovered that pneumonia and periodic fevers are convertible diseases in the way that the several forms of these have been shown to be. A case of intermittent or remittent is not converted into pneumonia by injudicious treatment, or a case of pneumonia transformed into a mild intermittent by proper, or into malignant remittent by improper remedies; their sequelæ are not identical. Those who have pneumonia in the autumn or winter, do not run as much risk of suffering from vernal agues or summer remittents, as those who have passed through these complaints; they do not possess many deep-seated analogies and identities, and the same treatment would require more than trifling modifications to make it applicable to both.

"In saying this much on the subject," Dr. La Roche adds, "I am far from denying the change from one disease to another. Such changes are of daily occurrence, and are observed in regard to almost every complaint to which the human system is subject. A case commences with symptoms of common remittent or intermittent fever; and at its close exhibits phenomena appertaining to yellow fever. In other instances the reverse occurs, cases of yellow fever ending with symptoms of periodic fever. Typhus, typhoid, or pestilential fevers terminate sometimes in the same way; while, at other times, cases which at their outset presented the characteristics of common intermittent or remittent fever, assume, as the disease progresses, those of the fevers mentioned. So also with regard to pneumonia and fever. Cases of the former not unfrequently, under peculiar endemic or epidemic influences, end with symptoms of autumnal, as also of yellow, or typhus, or typhoid fever. On the other hand, cases of periodic or other fevers sometimes terminate with symptoms of pneumonia.

"Doubtless changes of the kind may, strictly speaking, be regarded as cases of conversion; but the conversion herein noticed is not that of one form of a disease into another form of the same. It cannot be occasioned by an increased

force in the cause of the disease first existing, by a difference in the state of predisposition of the person attacked, or by the peculiar mode of treatment pursued. It is not the result of a mere modification of one and the same thing; in a word, it is the substitution, partial or complete, of one disease for another. Such conversions of diseases are not of rare occurrence. They are, indeed, familiar to all practitioners. They often lead to evil or fatal consequences, or simply to the removal of disease without restoration to health."

The seventh and concluding chapter treats of the complication of pneumonia with autumnal fevers. This complication of the two diseases forming a hybrid affection, which must not be considered as a peculiar form of either. It is admitted that in miasmatic regions the complication alluded to frequently takes place, causing pneumonia there—like very many other diseases—to assume, to a greater or less extent, the periodic type. The pneumonic symptoms and the malarial fever are concomitant diseases in the same individual, and affect the patient according to the type of the latter; in paroxysms, if it is intermittent, in remissions and exacerbations, if it is remittent; that is, the pneumonic symptoms are always exasperated during the presence of the fever, and mitigated during its intermission or remission. In the combination of phenomena exhibited in the cases referred to, of pulmonary inflammation and periodic fever, Dr. La Roche maintains that we are not justified in assuming the identity of the two diseases, or that the one is a modification, or really and substantially nothing more than a peculiar form of the other. To him, as to some of the writers he refers to, and to many more that might be cited, all such cases furnish illustrations of the coexistence of two distinct complaints, produced by distinct causes, having distinct seats and characters, and governed by different laws, but which often modify each other to a greater or less extent.

The complication of diseases more or less distinct in their nature, and the modifying influence of epidemic over other complaints, Dr. La Roche shows to be facts well known to etiologists and pathologists. He also refers to the fact that diseases arising from various species of malaria, but marked by distinct characters, and governed by different laws, combine with each other, and present groups of phenomena which, though they have given rise to considerable discussion, and been subjects of angry controversy, must be viewed as the effect of such complications, and not as mere modifications of one and the same disease. Thus, diseases due to specific contagious poisons amalgamate together, or with other complaints, and form hybrid complaints, or exist together in the same subject.

Dr. La Roche admits that pneumonia, like other inflammations, sometimes assumes a periodic type, independently of a malarial influence. Of this there can be no doubt. The manifestation of a periodic character, he insists, can lend no support to the idea of identity, as regards causation and nature, of pneumonia with malarial fevers, of which periodicity, partial or complete, constitutes a characteristic element; unless we are prepared to assert that all diseases in which we notice perfect or imperfect remissions—whether observed in districts of country subject to malarial complaints, or in places totally free from these—are the products of the same cause as remittent and intermittent fevers, and consequently really and substantially nothing more than peculiar forms of them. From numerous facts upon record, and the legitimate deduction from these, it will admit of a reasonable doubt whether the element of periodicity does really belong exclusively to febrile diseases of a malarial origin.

"So far from it," remarks Dr. La Roche, "the periodical is as much a natural

type as the continued. It characterizes many of the phenomena of health, and exhibits itself in the physiological play—both as regards progress and intensity—of many of the functions; in the processes of secretion, elimination, and calorification; in the operations of the nervous system; in muscular contraction; in the action of the heart, &c. Intermittence, indeed, may well be viewed as an element essential to the existence of the normal actions of the economy. What is more, it adheres to these actions in their passage from the state of health to that of disease; and may, therefore, be recognized as an element of this state also. It stands as an illustration of the great law of periodicity which regulates all the vital movements."

Dr. La Roche next shows that the success of the anti-periodic treatment in pneumonia—supposing it true—is no proof of the identity of the disease with periodic fevers. In the course of this section doubts are expressed, and, we believe, well-founded ones too, as to the propriety and success of the abortive plan of treating febrile diseases, by means of quinia, given in scruple or even larger doses, with or without preparation, at the outset of the attack, with the view of arresting their progress.

The chapter closes with a short recapitulation of the reasons for believing that the hypothesis of the identity of pneumonia with autumnal fever is not supported by facts and solid arguments.

The work of Dr. La Roche is deserving of an attentive perusal on the part of every one who would make himself master of the facts and observations bearing directly upon the important etiological and pathological subjects discussed by its author, as they are recorded by the best medical authorities of the present and former times. These will be found interesting and instructive not only as they throw light upon the question of the supposed identity of pneumonia and autumnal fevers, but, also, in reference to many collateral points of deep interest and importance, bearing upon the causes and character of the diseases referred to. Many of them, also, derived from medical works of somewhat difficult access to the mass of the profession. The very profusion with which Dr. La Roche accumulates from every reliable source, facts to sustain each limb of the argument levelled by him at what he believes to be erroneous views of the etiology and nature of pulmonary inflammation, although entertained by writers of no mean authority in our profession; his desire to impress on the mind of his readers an idea of the appositeness and authenticity of these facts, and to enable them to verify their accuracy, by presenting the facts mostly in the language of their reporters, and pointing out where the record of them is to be found, constitute in our estimation no trifling recommendation of the work before us, and materially enhance its value and interest. The patient and laborious research of the author thus placing within the reach of every physician the results of the medical experience and observations of the past and the present; saving him the time, the labour, and the expense of consulting many books to learn what is actually known in reference to the important questions of which he treats—what views have been already shown to be erroneous, and upon what points we still remain in ignorance.

Let us now direct our attention to the author's views in relation to the existence and morbid agency of malaria.

In regard to the objections that have been urged to the existence of malaria as a cause of fever, Dr. La Roche maintains that the appearance of the disease in localities where no marshes exist does not disprove the agency of a poisonous exhalation existing in the atmosphere:—

"The writings," he remarks, "of Chervin, Boudin, Nepple, Maillot, Segond, Faure, &c., which are usually referred to in support of the strictly paludal

origin of fevers generally, will show that, even in the opinion of these authors, malarial exhalations of various degrees of virulence may, and do often proceed from surfaces presenting characters very different from those appertaining to ordinary marshes. Indeed, at the present day, this existence of malarial exhalations, and their efficiency in the production of fever, independently of the presence of marshes, properly so called, and their elimination from sources of various nature, and differing much in external appearance, is almost universally admitted—quite so, I think, by all who have taken pains to investigate the subject in all its bearings; for, though they are firmly convinced of the reality of the morbid agency of such effluvia, they know that fevers prevail sometimes even in arid places with want of surface-water, where the soil is rocky, or sandy, parched, and deficient in vegetation, and where, in a word, circumstances generally are, in appearance at least, unfavourable to the decay of organic matter. On this subject, the facts recorded by Ferguson, J. Davy, Craigie, Brown, Currie, Humboldt, and others, can leave no doubt. Nay more, it is almost as generally acknowledged, that the malignant forms of such diseases are never produced by the effluvia of genuine marshes, but are the products of other miasmatic sources; while, on the contrary, fevers known to arise from marsh exhalations, are never produced by the effluvia which occasion the other forms of the disease. Hence, when ordinary or malignant autumnal fevers occur in places where no marshes properly so called exist, it is of no avail to cite the absence of these as an evidence of erroneous conclusions; far less of absurdity, on the part of those who attribute such fevers to miasmatic exhalations. The latter writers know, fully as well as their opponents, that the existence of a marsh is not indispensable to the manifestations of the effect in question; but, unlike them, they are perfectly aware of the fact that morbid effluvia, of the most deadly character, too, may, and do arise from sources which bear no resemblance to a marsh. In the words of an intelligent writer, we may say: 'Marshes and swamps are far from being the only sources of miasmata. The foul shores of the sea, the moist slime and mud of the banks of great rivers, and of mill ponds; the mire and mud of the unpaved streets, ditches, lanes, and passages of great towns and cities, villages, &c., particularly the cellars and damp abodes where the poorer classes are most frequently doomed to dwell—the moats of garrisons, &c.; the soil where certain hospitals, barracks, or encampments are situated: the wells and cellars, damp pools and dungeons of prisons, and the holds of ships, are all calculated to emit pyrexial effluvia from the moist earth, mud, and filth, which are mostly to be found within their precincts.'"

The non-detection of malaria in the atmosphere of insalubrious localities is, Dr. La Roche insists, no evidence of its non-existence and morbid agency. Chemists, as he remarks, have not been more successful in the discovery of the poison of other zymotic diseases, smallpox, scarlatina, measles, hooping-cough, &c., and yet we know that they must at times float in the air, since they produce their respective morbid effects in individuals who breathe that tainted medium; and under circumstances, too, which forbid the supposition that those attacked could have received the infection by direct exposure to, or contact with, the sick.

Dr. La Roche then proceeds to show that fever is not due to the morbid action of any of the known gases floating in the atmosphere, or to an excess or deficiency of one or more of the known constituents of the latter in unhealthy localities. But, while admitting the truth of this, we can find, he remarks, no valid reason for denying the very existence of a specific febrile cause; for, from the circumstance that malaria cannot justly be identified with any of the known gases, it does not follow that the atmosphere of sickly localities contains no extraneous material to which autumnal fevers are to be ascribed. Some statements are then referred to, in reference to certain azotized flocculi, said to have been detected in the moisture of the atmosphere, and the dews of insalubrious districts, by some experiments performed in the



early part of the present century. These statements are deserving, however, of but little consideration. They do not of themselves, unsupported as they are by any extended series of observations, afford any evidence that the azotized matter referred to, even admitting its frequent existence, constitutes the febrile poison. It has been detected in air issuing from noted sources of vegetable and animal putrefactions, and which, nevertheless, did not give rise to malarial fevers, while, on the other hand, chemists have not unfrequently failed to detect azotized flakes in the air of localities where fever prevails more or less extensively.

Dr. La Roche infers the existence of malaria as the morbid agent in the production of fevers, from the character and condition of the localities in which these diseases prevail. Of the localities referred to, he presents a very full and accurate description.

The danger of an attack of fever, he shows, increases in proportion to proximity to such locations. If we approach to, or remain some length of time—occasionally only a few hours or even moments—in them, or in their immediate vicinity, we are stricken down with fever; if we avoid them, we escape.

A series of facts are adduced to prove that the morbid influence of these localities does not result from heat alone, nor from humidity, nor from a high dew-point, nor from heat and humidity combined, nor from vicissitudes of temperature, nor, finally, from a peculiar electrical condition of the atmosphere. We are not prepared to attack the correctness of either of the positions just enumerated—we admit that, of itself, neither of the circumstances referred to, is sufficient to account for the production of fevers in the localities where these prevail; we cannot, nevertheless, perceive that we are hence necessarily forced to admit the existence of a specific aerial poison, emanating—under the modifying influence of certain contingent influences—from organic substances during the process of decomposition. To the term malaria, however, when employed merely to express the morbid state or influence of the atmosphere of certain localities, whatever may be its precise nature and cause, there can be but little objection.

The innocuousness of some marshes, and of localities similar to those that are sickly, Dr. La Roche proceeds to show, are not evidence of the non-existence or non-agency of malaria. The exemption, he remarks, may be explained in various ways:—

“Sometimes it is due to the high elevation above the level of the sea of the places so exempted. At another time, the effect is attributable to the absence of a sufficiently high and long-continued atmospheric heat. In other instances, the circumstance is due to a very perfect and constant ventilation, and a very rarified and pure character of atmosphere. In some instances, again, it may be explained by the peculiar geological character of the soil; the quantity and the quality of the surface water; or the proportion of sulphates the latter contains in solution. Sometimes, also, it is due to the rapidity of the river currents; the excessive and rapid dryness of the atmosphere during the hot season; the existence and extensive prevalence of refreshing and purifying winds, and often to the degree of desiccation the surface has attained by natural or artificial means; the degree of cultivation to which it has been carried, and other agencies of like import, as well as by the extent to which it is sheltered, by rich foliage and other means, from the action of the sun. So far as ships are concerned, the freedom from fever will often be found ascribable to the latitude in which they may be navigating; to the early period of the year in which they may be at sea, or otherwise employed; or to the absence of an epidemic constitution of atmosphere.”

The leading causes of exemption from fever of certain localities, whose general characteristics would lead to the inference of their being malarial, are separately considered by Dr. La Roche; and, with his characteristic industry, he has brought forward in reference to each a large amount of facts to prove and illustrate its direct bearing upon the question under discussion.

The ensuing two chapters are principally occupied with an exposition of the more prominent of the facts which, in the estimation of the author, establish the existence of malaria, and its agency in the production of disease. In these chapters will be found an excellent digest of nearly all the important observations upon record illustrative of the conditions and localities favourable to the production of autumnal fevers, and of the means by which those conditions may be modified or changed, and the insalubrity of the locations abated or destroyed.

We cannot follow Dr. La Roche throughout the several branches of his certainly most able argument in favour of the existence of a specific aerial poison as the cause of autumnal fever; nor can we consider in detail the various facts adduced by him in support of his general deductions. Of the accuracy of these facts, there can be no doubt; how far they bear out the author in his views respecting the nature and source of malaria, we leave to the readers of the work before us to decide.

That we may do entire justice to the views of Dr. La Roche in regard to the etiology of autumnal fevers, and the arguments by which they are sustained, we present the twenty-six propositions that he believes to be legitimate deductions from all the facts and statements passed in review by him.

"1. The doctrine of malaria, though of ancient origin, and very generally admitted, has encountered, and continues to encounter, opposition.

"2. The appearance of autumnal or periodic fevers, where there are no marshes, properly speaking, does not disprove the existence or agency of malaria in the production of that class of disease, inasmuch as there is nothing to hinder morbid exhalations from being furnished by terrestrial surfaces of a different character, and no writer of any reputation has denied the fact of such occurrences.

"3. The constant association of these fevers with peculiar characters and conditions of localities, and their absence or cessation where these characters and conditions do not exist, or, having existed, have ceased to do so, through the operation of artificial or other means, lead to the opinion of the evolvment from these localities of some peculiar morbid poisonous substance from the soil, or the materials by which it is covered; and of the connection, as cause and effect, between this exhaled substance and the disease in question.

"4. The inability of the chemist to detect this malarial poison in the atmosphere of sickly localities, and to point out its nature, does not disprove its existence, inasmuch as other substances, the presence of which cannot be doubted, equally escape detection.

"5. Atmospheric heat alone will not serve to account for the production of periodic fevers of various grades and types; for these fail to appear in seasons when, and in places where, the thermometer ranges higher than at other seasons when, and in places where, they prevail extensively. Besides, instances are not rare when fevers have stopped though the heat continued unchanged, and apparently from the influence of a very high range of temperature.

"6. Nor can terrestrial or visible atmospheric humidity account alone for the effect under consideration. Though fevers often break out or prevail during wet weather, they usually cease when this humidity is at its height, and reign most generally during the drying process—often during very dry spells of weather.

"7. Fevers of the kind mentioned cannot be due simply to a high dew-point, for they exist and are rife when the latter is not higher than in healthy seasons.

"8. For reasons assigned, the efficient cause of fever cannot be sought in any peculiar modification in the electrical state of the atmosphere. This fluid, by its excess or deficiency, may and does, no doubt, exercise an agency in the matter; but that agency is evidently limited to placing the system in a proper condition to receive the impress of a morbid cause; for furthering, when deficient, the formation of the latter, or, when in excess, to neutralizing or destroying its effects. But, in all cases, the presence of such a cause is required before autumnal fevers can be produced.

"9. The same may be said of atmospheric vicissitudes. These may and do often occur, without periodic fever being the consequence; and, conversely, those fevers frequently occur without appreciable vicissitudes.

"10. The attack comes on too suddenly, and, not unfrequently, after too transient an exposure to evident sources of infection, without the possible occurrence of any other influencing agency; at other times, it occurs too long after a residence in, or visit to, places where the disease is known to prevail, to be the effect of any other cause than a morbid poison introduced into the system.

"11. The opinion of the existence and agency of such a poison will appear the more natural when we find that the danger of an attack is generally proportionate to the proximity to localities where these diseases prevail—the other agencies being the same beyond as within the sphere of their prevalence; that vessels on a sickly coast remain healthy so long as they do not approach the land; that they become again healthy by removing to a short distance, or by merely shifting their position; and that individuals from on board, who land, and those especially who sleep on shore, are almost certain of being attacked.

"12. The development and prevalence of fever on board of ships, when other vessels in the vicinity remain healthy; its occurrence only in limited parts of the under decks; and its being arrested by a proper system of expurgation, lead to the opinion of the generation and existence there of a morbid poison.

"13. The innocuousness of some marshes, of ships in a foul state, or of surfaces bearing a strong resemblance to others in which periodic fevers prevail, is no proof that exhalations issuing from sickly places or ships are not the cause of the disease; for, besides that the latter is often traced to some source of decomposition in a way to leave no doubt as to the agency of these, the exemption may be justly attributed to the existence, in some instances, or to the absence, in others, of a variety of necessary and concomitant circumstances. Fevers do not prevail beyond a certain altitudinal range; they require a certain amount of heat, and that this heat should be continued during a certain length of time; they require, besides, a certain amount of terrestrial humidity, no more nor less; or, at least, that the soil should have been well saturated before being exposed to the prolonged operation of the solar heat; also, a close and still atmosphere, and other contingencies adverted to. Without these, they do not appear to show themselves, how favourable soever to the generation may be the condition and nature of the soil, or the substances by which it is covered or permeated.

"14. The malarial doctrine receives further support from the well-attested fact, that the cause of fever is carried by the wind from paludal and sickly localities to places situate at considerable distances; the latter places remaining healthy as long as they are to the windward of the others, and becoming sickly when they are to leeward. In such cases, the wind cannot have carried an amount of heat or humidity sufficiently different from that existing before to account for the effect produced. Nor can it act by occasioning a much greater amount than usual of atmospherical vicissitudes. Hence, the cause, to be thus wafted from one place to another, and to give rise to a particular disease, similar to that of the locality from whence it proceeds, must consist of a malarial poison, mixed with or suspended in the atmosphere.

"15. Equally favourable to the correctness of the belief, is the effect resulting from the upturning of soil in hot weather. The injury resulting from this operation, as illustrated by a wide diffusion of malarial fevers, and the great mortality often occurring on the levelling of streets, digging ditches and canals, cutting down bluffs, caving in of river banks, &c., cannot be accounted for on the principles advocated by the opponents of the malarial doctrine, and are

more easily explained on the supposition of a poison exhaled from the decomposed organic matter contained in freshly exposed earth.

"16. The effect of partial draining; of exposing a virgin soil to the action of the sun; of the imperfect desiccation of the soil after an overflow, and other kindred occurrences, in producing or increasing fever; and the converse effect of complete draining, of covering a marshy surface with water or sand; or masses of decaying organic materials, or any other unhealthy place, in the same way, or with earth, in putting a stop to fever, lead to the same conclusions.

"17. Agreeably to no other doctrine than the malarial, can we explain the greater sickliness of marshes formed by the mixture of salt and fresh water; for this mixture cannot increase any of those influences to which others attribute diseases thus produced or aggravated; while we can understand that the mixture may act injuriously, by furthering the decomposition of the organic matter which it saturates, as well as by the reciprocal destructive action of fresh water on the living beings contained in sea water, and, reversely, the destruction by the latter of those contained in fresh water.

"18. The limitation of the disease to a restricted locality, to a few streets or buildings, to one house, or side of a house, or one room, &c., bespeaks, as do like occurrences on ship-board, the existence of a local cause of infection, and, consequently, the exhalation from this of a morbid agent.

"19. The opinion of fever being due to the introduction into the system of a morbid poison, floating in the atmosphere of sickly places, receives a strong support from the analogy existing between their symptoms and anatomical lesions, and those resulting from the introduction of putrid organic matter into the circulation, or the inspiration of putrid vapour.

"20. The arresting or mitigation of fevers in sickly localities by a resort to proper hygienic means, disinfectants, washing, excessive heat, &c., lead to the same opinion; for these means operate in the same manner on other morbid causes, the effluvial nature of which is undoubted, while they have no efficiency in cases of diseases arising from other agencies.

"21. The effects of trees, walls, hills, buildings, curtains, &c., in arresting the transit of the cause of fevers, are equally favourable to the idea of that cause being a malarial poisonous substance contained in the atmosphere.

"22. Still more conclusive is the destruction of that cause by frost, for the latter cannot produce its beneficial effects by an action on any of the other agencies to which fevers are ascribed; while it is known to exercise the same destructive influence over other causes of a character similar to the one from which fever originates.

"23. The wide prevalence of autumnal fevers in certain localities; the great mortality to which they sometimes give rise; and the diffusion of some forms of them over a very large expanse of country, at a time, too, when the sensible qualities of the atmosphere do not appear to have varied in any important point from what they are in healthy seasons, afford an additional reason for attributing them to a toxical agent floating in the atmosphere.

"24. The transmission of the disease to the fœtus in utero; its production from the internal use of the waters of marshes; the inability of such waters to sustain life in fish and other animals of the kind; the undermining effect of a malarial atmosphere on the system: the production by it of a state of cachexia, and its influence in shortening the duration of life, indicate the existence and agency of a poisonous substance transmissible, in the one case, like other morbid poisons, by the mother to the child she bears in her womb; in another case capable of solution in the water which helps to its generation; and in others, again, endowed, like well-known poisons, with the power of gradually occasioning peculiar and injurious changes in the blood and vital organs.

"25. The neutralizing influence exercised by the poisons of some zymotic diseases over the agent producing malarial fever, would seem to indicate the existence of a close analogy between the latter and the former. The same remarks are applicable to the pathogenic antagonism existing between malarial and typhoid fevers.

"26. Lastly, from all that we can gather respecting the origin, mode of pro-

gression, and phenomena of autumnal fevers, the nature of the localities they visit, the circumstances under which they appear, the agencies which promote their development, or retard or arrest their progress, we may conclude, without fear of error, that everything tends to connect the morbid agent, of which autumnal fever is the offspring, with the products of the decomposition of organic materials; requiring as it does, for its generation, the action of the very same agencies which are necessary for that decomposition. Like the latter, it requires the presence of the above materials; like the ordinary decomposition of these, the febrile cause requires for its generation a more or less prolonged continuance, and a certain degree of atmospheric heat; it requires, also, a certain amount of moisture. In the one as well as the other process, an excess of this moisture prevents or arrests its progress; in the one as well as the other, a total absence of the same produces a like preventive of destructive effect. The generation or diffusion of the febrile cause is promoted by a calm and close state of the atmosphere, and retarded, prevented, or modified by free ventilation, elevated situations, and a pure quality of the atmosphere. Like ordinary decomposition, the process by which the febrile cause is produced, is retarded by cold, and arrested by frost, as well as by intense heat."

D. F. C.

## BIBLIOGRAPHICAL NOTICES.

ART. XVIII.—*Reports of Institutions for the Insane.*

1. *Of the New York State Asylum*, for 1851 and 1852.
2. *Of the New York City Asylum*, for 1851 and 1852.
3. *Of the New Jersey State Asylum*, for 1851 and 1852.
4. *Of the Pennsylvania State Hospital*, for 1851 and 1852.
5. *Of the Frankford Asylum (Pa.)*, for 1851 and 1852.

1. ALTHOUGH the report for 1851, by Dr. BENEDICT, of the New York State Lunatic Asylum, is less elaborate than that which preceded it, and a considerable portion of it occupied by an exposition of the necessity of new apparatus for heating the buildings, and other subjects of comparatively local interest, yet it furnishes us with some items of value in the physical department of the profession.

	Men.	Women.	Total.
Patients at the commencement of the year	202	227	429
Received in the course of the year	185	181	366
Whole number	387	408	795
Discharged, including deaths	167	193	360
Remaining at the end of the year	220	215	435
Of the patients discharged, there were cured	58	54	112
Died	24	24	48

Applications for the admission of forty-seven patients, of whom sixteen resided in other States, were rejected.

The proportion of recoveries is smaller than usual, "for the reason," in the words of Dr. Benedict, "that we have been cautious in pronouncing a case recovered, though apparently well. We place all the cases of insanity from intemperance, from epilepsy, from general and gradual impairment of the faculties by age, and paroxysmal cases, though leaving the institution *well*, under the head of *improved* instead of *recovered*. The reason is obvious; there being no certainty that they will remain well for any length of time." This is "drawing the lines" a little closer, in regard to recoveries, than they have sometimes been drawn; as, for example, in an old report of one of our American asylums, in which one patient is recorded as "discharged—recovered," some six or eight times in the course of the year.

"The perfection and permanency of recoveries not unfrequently is cause of doubt and anxiety. Of the 1,300 recoveries of the past nine years, 206 have been readmissions. Of the 51 readmissions of this year, 11 were persons who had been discharged well, in 1850. Two of these 11 were discharged recovered, in 1846, and 1847, one in 1847 and 1849, one in 1846, and two in 1849, making, in 11 persons, 20 recoveries, and 31 admissions."

The foregoing extract contains a detail which is too often neglected by the writers of these reports, but which is absolutely necessary to convey an accurate idea of the curability of insanity to the uninitiated reader.

Of the 112 cases of recovery, the duration of insanity before admission was one month and under, 36; two and three months, 44; four to seven months, 18; seven to twelve months, 9; over twelve months, 3; unknown, 2.

The time of residence at the Asylum, of the same cases, was—two months and under, 10; three months, 6; four to seven months, 54; seven to twelve months, 27; one to two years, 13; two years, 2.

"Dysentery, diarrhoea, and erysipelas," continues the report, "are the diseases with which we have to contend most frequently, and when our ventilation shall be improved we hope to see these disappear. We have had, during the year, 41 cases of dysentery, 25 males and 16 females. Duration of the disease varied from three to twenty days; average, nine days. One case in December, 1 in February, 3 in April, 1 in May, 1 in June, 2 in July, 23 in August, 10 in September. Fifty-five cases of diarrhoea; 23 males, 32 females; duration from two days to two months. These cases occurred during the severe months with those of dysentery, 30 of them in August. Twenty-four cases of erysipelas—9 males, 15 females; 3 of them were in December, 1 in January, 6 in March, 3 in April, 4 in May, 2 in June, 1 in August, 1 in September, and 3 in October. Average duration, eleven days. Six cases of typhoid, 3 of remittent, and 1 of intermittent fever. Acute affections of the lungs have been rare."

*Causes of death.*—Dysentery 6, diarrhoea 1, erysipelas 1, phthisis pulmonalis 11, chronic insanity 10, acute mania 1, general paralysis 2, epilepsy 5, pleurisy 1, malignant pustule 1, rheumatism 1, intemperance 1, suicide 5.

"The general prevalence of the suicidal propensity which was mentioned in my last report (and quoted in our former notices) as subsiding, returned with increased intensity, and continued throughout the winter and spring. In one case the act was committed soon after the admission of the patient, in whom there was no knowledge of the existence of the propensity. Another had been, during a residence of many months, remarkably cheerful and happy; an attack of erysipelas of the face confined him to bed, and rendered him very uncomfortable, and, at the height of the disease, he suspended himself from his window. All the suicides were by suspension from the window-bars, except one. To guard against such accidents, we have now adapted to a part of them sash-locks, which secure the windows from being opened and exposing the bars."

Statistics from the report for 1852:—

	Men.	Women.	Total.
Patients at the commencement of the year	220	215	435
Received in course of the year	200	190	390
Whole number	420	405	825
Discharged, including deaths	205	195	400
Remaining at close of the year	215	210	425
Of those discharged, there were cured	92	64	156
Died	22	17	39

Sixty applications for admission were rejected.

"Of the 156 patients recovered, 92 are recorded *well*, and 64 in *usual health*. It may be proper to enter all these as *recovered*, they all having regained that state of mind possessed by them before their insanity; and yet many of them cannot be said to have that stability of character accompanying a sound mind. Under this head, *usual health*, we place that large class of weak-minded persons who run mad after every novelty, and again recover their equilibrium by seclusion in an asylum; and also others who leave apparently well, but are likely to become again deranged under exposure to the cause of previous attack. This division of recovered cases seems better than reporting the latter improved, as in our last report, which, in this respect, was a departure from established usage.

"The mortality for the past year is much less than for several previous years, while the amount of sickness has been about the same as last year. The principal diseases which prevailed during the year were: dysentery, 41 cases; diarrhoea, 45 cases, most of them in July and August; erysipelas, 21 cases; and typhoid fever 10."

*Causes of death.*—Phthisis pulmonalis 9, chronic insanity 6, epilepsy 5, phlegmonous erysipelas 4, opium-eating 3, dysentery 2, chorea 2, disease of heart 2, intemperance 2, acute dementia, general paralysis, apoplexy, and old age, 1 each. The number of deaths from acute disease is remarkably small.

"We are highly favoured in being able to report no deaths from suicide. This year only, since the second of the Institution's history, has passed with-

out such an accident. Nor do we report any deaths from exhaustive mania ('typho-mania,' 'phrenitis,' 'Bell's disease,' of other reporters). The number treated was eleven, some of whom had been greatly depleted previous to admission. We cannot urge our medical brethren too strongly to abstain from the practice of taking blood from insane persons. Our plan of treating very active insanity is directly opposed to depletion. Not one ounce of blood has been drawn from the 825 patients under treatment during the last year (fifty-four of these were of less duration than one month). We resort to stimulation in many cases with great freedom, and have seen the best evidence of its propriety."

Patients admitted from Jan. 16, 1843 to Dec. 1, 1852	3,499
Discharged, recovered	1,456
Died	407

To relieve the Institution from its most troublesome patients, such, too, as ought not to be associated with other insane persons, Dr. Benedict recommends "the erection of a hospital for 250 patients of the male sex only; to be carefully constructed, and fitted for the ultimate occupancy of lunatic criminals only; but to be used, until needed exclusively for this purpose, by criminal and homicidal lunatics, and drunkards." The suggestion is one well worthy of the attention of the public authorities in all the large States.

A scheme of moral treatment, including religious services, employment within doors and without, plays, tableaux, theatrical exhibitions, fairs, excursions, &c. is actively pursued. "The Opal," a magazine edited by the patients, is continued, and, by its more than three hundred exchanges, furnishes a great fund of transient reading matter, while the profits accruing from it during the year are sufficient to add several hundred volumes to a permanent library.

The legislature has appropriated thirty thousand dollars for the improvement of the means of heating and ventilating the buildings of the Asylum.

	Men.	Women.	Total.
2. At the New York City Lunatic Asylum, Blackwell's Island, the number of patients on the 1st of January, 1851, was	200	264	464
Admitted in course of the year	216	225	441
Whole number	416	489	905
Discharged, including deaths	183	205	388
Remaining, December 31, 1851	233	284	517
Of those discharged, there were cured			208
Died	37	43	80

Of the cases discharged, ten were delirium tremens, all cured.

*Causes of death.*—Consumption 25, general debility 15, paralysis 11, chronic diarrhœa 8, epilepsy 5, apoplexy 4, dysentery 3, old age 2, pneumonia, phrenitis, carcinoma, hydrothorax, continued fever, gastritis, and albuminaria, 1 each. Of the patients admitted, 98 were natives of the United States, and 343 of foreign countries.

A considerable portion of Dr. RANNEY's report is devoted to a history of the improvements of the Institution during the preceding five years—improvements, the result of which is that, "the very worst class of patients are as comfortably situated, at present, as were the best class in 1847."

Dr. R. suggests to the philanthropic a field for the useful employment of their benevolence, in taking charge of the poor insane, who, recovered from their mental disorder, are discharged from the Asylum without pecuniary means, or a place of employment. We most cordially "second that motion," and recommend it to the consideration of the benevolent in all places where there is a large institution for the insane, among the patients of which there are many from the poorer classes. Associations for the purpose alluded to have been formed in Europe, at Eberbach, in the Dutchy of Nassau; at Stephansfeld, near Strasbourg; and at Vienna. It is said that they have been eminently useful.



Dr. A. V. Williams, one of the Visiting Physicians to this Asylum, resigned his place at the close of 1850.

Report for 1852:—

	Men.	Women.	Total.
Patients, January 1, 1852	233	284	517
Admitted in course of the year	241	254	495
Whole number	474	538	1,012
Discharged, including deaths	248	237	485
Remaining, December 31, 1852	226	301	527
Of those discharged, there were cured			248
Died	70	60	130

Of the persons admitted, 102 were natives of the United States; 1, of Canada; 2, of Nova Scotia; 3, of Jamaica; and 387 of various European countries.

Of the cured, 10 were cases of delirium tremens; 3, of febrile delirium; and, 1, of typhus fever. The last two classes are placed under the head of *improper subjects*; as, also, are two cases of epilepsy, discharged *improved*, and four persons *not insane*.

*Causes of death*.—General debility 38, consumption 26, paralysis 15, typhus fever 10, diarrhoea 6, old age 5, paralysie générale 5, epilepsy 4, typhomania 3, apoplexy 3, mania 2, delirium tremens 2, dysentery 2, phrenitis 2, convulsions, pericarditis, laryngitis, pneumonia, erysipelas, and dropsy, 1 each.

The increase in the number of deaths over that of 1851 is attributed "almost entirely to the admission of improper subjects. In September, there were seven deaths of patients admitted within the month—all from long-standing diseases—not one of which ought to have been sent to the Asylum. The only endemic form of disease was from the 20th of November to the 15th of December. During this period twelve cases of typhus fever occurred, from which there were three deaths, one of this number being a highly valued attendant of the hall in which the disease originated. The only assignable cause for its production was a change of water. The main pipe for the conduction of the Croton water to the island having been broken, the supply was obtained from a well under one of the wings of the Asylum. On the reintroduction of the Croton, the disease disappeared."

"Two years and seven months have elapsed since a suicidal death occurred in this institution."

After a long struggle in the attempt to free the Asylum from penal convicts as attendants upon the patients, they have at length been entirely banished from the wards of the main building. "The experiment has proved," according to the report, "beyond all cavil, that this change has not increased the expense." Thus the great argument for the employment of such nurses has been effectually demolished. Yet, at the time the report was written, they were still employed in the "Lodge"—where are the apartments of the most violent patients—and in the kitchen, laundry, &c. of the main building. Dr. Ranney urges their entire removal, for many plausible, and, at least to many persons experienced in the care of asylums, very obvious reasons.

The following case, of some importance in a medico-legal point of view, is mentioned in this report:—

"A patient, who committed homicide in the city, died last November. He became jealous of his wife, and killed the man whom he fancied was her paramour. The case was a remarkable one from the fact that, although he was actually insane at the time the deed was committed, yet, by the advice of a friend, he feigned another form of insanity. He believed that he had frequently seen Jesus Christ arise from the flame of a candle; that God had given him (who?) full power over the man (which?); but when examined, he pretended not to comprehend anything said to him, and for several weeks would only say, 'I don't know, sir.'"

3. Of the thirty-five pages of the annual report from the New Jersey State Asylum, for 1851, only six are occupied by that of its superintendent, Dr. But-

tolph, and half of these are devoted to improvements made, and additions required, to the buildings.

	Men.	Women.	Total.
Patients in Asylum, January 1, 1851.	86	70	162
Admitted in course of the year	50	52	102
Whole number	136	128	264
Discharged, including deaths	51	42	93
Remaining, January 1, 1852	85	86	171
Of those discharged, there were cured	22	15	37
Died	4	4	8

The number of patients in the course of the year was greater, by forty-four, than that of the preceding year.

Experience has proved that it is cheaper to light the buildings by gas, made upon the premises, than by oil.

From the nearly thirty pages of the essay upon the nature, forms, causes, means of prevention, and general principles of treatment of insanity, we cannot well make many isolated extracts. Nor are there many which would offer much novelty to persons who have already read Spurzheim or Combe. The following remarks upon attempts to define insanity are very just, irrespective of phrenology:—

“From this (the dependence of mental integrity upon the integrity of special physical organs) it will appear how utterly futile are attempts by physicians, physiologists, and jurists, to frame a definition of insanity so comprehensive as to embrace all supposable examples of the disease, and yet so particular as to be of practical utility in determining its existence in doubtful cases. Insanity, or mental derangement, being the opposite or counter state to sanity, or mental soundness; a knowledge of each individual standard of the latter must be had to enable us to exercise enlightened judgment of the existence and degree of the former in a given case. It may be remarked generally, therefore, that a state of insanity, or mental derangement, is that in which there is a departure, through disease of the brain, from the natural standard of thought and feeling of an individual, without his being conscious of the same, and in the loss of his ability to act freely in these circumstances. The expression of the sentiment embraced in this statement is deemed important, so far as it suggests the necessity, in each case, of a careful comparison of the supposed insane with the natural character of the individual, rather than a reliance upon a definition or rule of judgment that may not apply to his state or standard of mind.

“In criminal suits, involving the question of insanity, this rule or mode of procedure is quite as important to secure the ends of public justice, as to protect the rights of the culprit; because, conduct that would appear as the height of insanity in a majority of minds, may be in strict keeping with the standard of character in the person committing the offence, and indicate either an excusable degree of stupidity, or a most reprehensible state of depravity.”

In regard to the question of isolation, we make the following extract:—

“When the mental derangement depends upon bodily disease of a temporary character, the patient should not be removed from home until a fair trial has been made for its cure; or, should it be very severe and more continued, he should not make the journey to an asylum under circumstances likely to increase it. Persons of advanced age, who are insane from the irregular decline of the faculties, or who are partially paralytic, but who have no dislike to their friends, and are quiet and manageable, may be as well treated at home as at a public institution. Again, very delicate females, who are only partially insane, but who cherish a strong attachment to home and friends, are sometimes unfavourably affected by the separation from them, and by association only with strangers. There may be yet other cases of this class, but there are more of which seclusion is of doubtful expedience, and can only be correctly determined by a careful consideration of all the circumstances attending them.

	Men.	Women.	Total.
Patients in the Asylum, January 1, 1852 . . . . .	85	86	171
Admitted in course of the year . . . . .	60	61	121
Whole number . . . . .	145	147	292
Discharged, including deaths . . . . .	54	56	110
Remaining, January 1, 1853 . . . . .	91	91	182
Of those discharged, there were restored . . . . .	19	26	45
Died . . . . .	11	15	26
Whole number from opening of the asylum, May 15, 1848 . . . . .	264	251	515
Discharged recovered . . . . .	81	80	161
Died . . . . .	25	28	53

Twenty-five more cases were treated in 1852 than in any previous year.

The unusual number of deaths, the past year, was owing, "in part, to the great accumulation of chronic and enfeebled cases, and also from the occurrence of a dysenteric affection following the extremely hot weather of summer, and which proved fatal in nine instances of patients of this class." The other deaths were from congestion of the brain 3, epilepsy 4, consumption 4, chronic abscess, palsy, exhaustion, of acute mania, 1 each, and 3 from general exhaustion in dilapidated constitutions.

Dr. Buttolph urges the necessity of increasing the accommodations for patients by completing the original design of the building, in the erection of two additional wings. At one time, during the past year, the number of patients (208) was "more than benevolence would dictate, or than prudence would justify."

Stuart F. Randolph, Esq., a native of New Jersey, but for many years resident of New York city, has made a donation of two thousand dollars—with a pledge of five hundred more, should it be necessary—for the construction of a building, upon the asylum grounds, to be used as a museum and reading-room by the patients.

4. After long, repeated, and persevering endeavours to establish a State Hospital for the Insane of Pennsylvania, success has at length been achieved—mainly through the untiring energy of Miss Dix—and we have the pleasure of bringing to the attention of our readers the first two reports of the superintendent of the institution, Dr. JOHN CURWEN.

We are informed in the first that the "Lunatic Hospital of the State of Pennsylvania" is situated about one and a half miles north of Harrisburg, upon a farm of one hundred and thirty acres. The corner-stone "was laid by Gov. Johnston, on the 7th of April, 1849, and the building was delivered, by the architect and contractor, to the commissioners on the 19th of June, 1851." It "consists of a centre building, and a wing extending in a linear direction on each side. Each wing is so arranged that the second projection recedes twenty feet behind the first, and the third the same distance behind the second, so that the second and third projections are open at both ends, which renders them light and cheerful, and insures, at all times, a free, natural ventilation. The centre building is of three stories above the basement, or ground floor, has a large Tuscan portico, with a flight of twenty steps to the main entrance, and is surrounded (surmounted?) by a large dome, from which a very extensive view of the surrounding country is obtained."

The main wing, on either side, is of three stories, including the basement; the first receding portion three stories, and the second receding portion, intended for violent and noisy patients, two stories.

The whole building is warmed by air, heated, in the air-chambers in the basement, by steam passing through sixteen thousand feet of cast-iron pipes, which are connected with two cylinder boilers, each forty feet long and forty inches in diameter. It is lighted by gas, brought from the works of the Harrisburg Gas Company. It is abundantly supplied with water, and has, in its attic, four tanks of an aggregate capacity of twenty-two thousand gallons.

Thus, built upon one of the most approved models, and furnished with all

the means which experience has proved to be most convenient and useful for an establishment of the kind, the institution was opened on the 1st, and received its first patient on the 6th of October, 1851. The number admitted between that time and the close of the year was thirty-seven. One was "a boy, six and a half years of age, whose disorder of mind was caused by convulsions during dentition, and who is yet subject to a slight spasmodic affection; and another a girl of thirteen years, in whom the mental derangement arose from epileptic convulsions, but, since a severe attack of bilious fever, six months ago, the convulsions have not returned." One epileptic patient had died.

We now proceed to the report for 1852.

	Men.	Women.	Total.
Number of patients, December 31, 1851 . . . . .	24	13	37
Admitted in the course of 1852 . . . . .	65	53	118
Whole number " . . . . .	89	66	155
Discharged, including deaths . . . . .	29	19	48
Remaining December 31, 1852 . . . . .	60 <sup>1</sup>	47	107 <sup>1</sup>
Of those discharged there were cured . . . . .			13
Died . . . . .			7

*Causes of Death.*—Exhaustion from acute mania, 1; paralysis, 1; latent pneumonia, 1; "exhaustion consequent on chronic mania," 4.

Dr. Curwen remarks:—

"Although the institution has been in operation more than a year, we have not yet found occasion to break through the rule which was adopted at the opening—never to use mechanical restraint, if it could by possibility be avoided. That cases have been received in which, by many, restraints would have been used, is freely admitted; but separation and seclusion for a few hours has generally accomplished the desired object, with much less irritation to the feelings of the patient, and less difficulty to the attendant."

The doctor's rule, however, literally interpreted, is somewhat too rigid. It admits of no exception. Mechanical restraints can, "by possibility," in every case, and always, be avoided. Yet there are patients to whom their application, even against the will of the party most immediately interested, is in accordance with, and the neglect of such application a dereliction from, the dictates of true humanity; to say nothing of those who entreat their care-takers to bind their hands, lest they destroy the life of themselves or of persons around them.

The following remarks, if not novel, are nevertheless true:—

"I feel that I am discharging a part of my duty towards the insane, in calling attention to an error which is very extensively prevalent, and which consists in the almost invariable resort to bloodletting in all cases of insanity. All hospital experience, not only in this country, but also in Europe, has proved that the loss of blood, in any form of insanity, is almost uniformly attended with unpleasant effects, prolonging the period of cure, and, in many cases, placing the patient hopelessly beyond the reach of any benefit to be derived from subsequent treatment. Insanity is essentially a nervous disorder, and must be treated as such; and the greatest care should be taken to distinguish between that excitement which is purely nervous, and the delirium caused by inflammatory action. When any doubt exists, the abstraction of a few ounces of blood by cups or leeches, carefully watching the effects, will enable the physician to judge of the propriety of the course he is pursuing."

Let no one condemn this opinion of Dr. Curwen, on the ground that it is hastily formed, or based upon the experience of but little more than one year in a new institution. Previously to his connection with the asylum at Harrisburg, he had been for several years the assistant physician of the Pennsylvania Hospital for the Insane.

<sup>1</sup> The report says 59 and 107—but such are not the results from the preceding data. The case of death by epilepsy, before the close of 1851, is probably retained in the number of patients at the beginning of the year.

The following extracts will show that the institution, even in its infancy, is as well supplied with the means of moral treatment as many have been in their adolescence, or manhood, and once more awaken our admiration for that benevolence, the copious current of which is now so freely running in the direction of the afflicted many who are suffering under psychic disorders.

"Religious services have been regularly maintained, on the Sabbath, during the whole year. \* \* \* Evening prayers have also been regularly kept up during the year, to which all who feel inclined are invited to come.

"The Philadelphia fund for the benefit of the patients, collected through the instrumentality of that ardent friend of the insane, and of every benevolent work, Miss D. L. Dix, has already furnished essential advantages to the patients, in the use of a carriage and pair of horses, quite a number of musical instruments, two polyoramas, a large dioptric magic-lantern, with a number of slides, a small magic-lantern to be used in the wards, kaleidoscopes, backgammon-boards, and a number of other games, a large number of books, engravings, two large walnut book-cases, each capable of containing 250 volumes, and two globes. \* \* \* A large piano, with an æolian attachment, has been ordered for the chapel. \* \* \* A certain portion of this fund has been placed at my disposal for the erection of a reading-room and museum for each sex on the grounds of the institution."

5. The number of patients in the Frankford Asylum, on the 1st of March, 1851, was 43; admitted during the year, 44; whole number, 87; discharged, including deaths, 35; remaining, March 1, 1852, 52. Of those discharged, 14 were cured and 6 died.

One died of fever, one of phthisis pulmonalis, one of exhaustion, one of effusion on the brain, and two by suicide.

"It is worthy of remark," says Dr. Worthington, "that the death from consumption is the first that has occurred among our patients from that disease for ten years past, especially as it is considered to be one of the most common causes of death among the insane.

"*Exhaustion* is a term which has been used to designate the cause of death in a peculiar form of disease, which appears to consist principally of intense excitement of the nervous system, with a tendency to rapid prostration of the vital energies, generally terminating fatally in the course of a few days."

It is well, when one uses a generic term with a specific signification, to explain its meaning, as Dr. Worthington has done in this instance. It is very evident that his "*exhaustion*" is nothing more nor less than the "typomania," "phrenitis," "Bell's disease," "exhaustive mania," already alluded to. The same word, "*exhaustion*," is not unfrequently used by other reporters in, as we understand it, a very different sense. With them, we have always supposed it implied those cases of death in which there had been a gradual, but slowly-progressive wasting of the vitality of the body, without any evident, specific, organic lesion; in short, what other reporters still have called "*marasmus*"—a disease, by the way, which appears to have greatly diminished, since, although, according to the reports, it was in former years fatal to large numbers, not one case of death from it is mentioned in either of the reports reviewed in this article!

Dr. Worthington informs us that an unusually large number of suicidal patients were treated in the course of the year, and that six of them were cured.

One of the patients who died had been at the asylum about twenty-five years, and was 73 years of age; while, of the 52 remaining at the close of the year, 12 were upwards of 60. These facts, no less than that in regard to the exemption from pulmonary phthisis, are demonstrative of the salubrity of the location of the asylum, and of the excellence of the hygienic treatment.

On the 1st of March, 1852, there were 52 patients; admitted in the course of the year, 28; whole number, 80; discharged, including deaths, 24; remaining, at the close of the year, 56. Of those discharged, 15 were cured and 5 died.

"Of the five deaths, two were from phthisis pulmonalis, one of organic disease of the brain, one of epilepsy, and one of carditis. The two cases of con-

sumption were admitted with that disease, and died, one eleven days, and the other about a year after entering the institution."

Since the opening of the institution, in 1817, "eleven hundred and sixty-nine patients have been admitted; of whom five hundred and fifteen have been discharged restored, and one hundred and fifty-five have died."

Although the report before us is well adapted to the persons for whom it is most particularly intended—those who have friends at the asylum, and those who are seeking the benefits of such an establishment—yet the subjects treated, aside from those already noticed, furnish nothing of importance that would be new to our readers.

P. E.

ART. XIX.—1. *A Text-Book of Anatomy, and Guide in Dissections, for the Use of Students of Medicine and Dental Surgery*. By WASHINGTON R. HANDY, M. D., Professor of Anatomy and Physiology in the Baltimore College of Dental Surgery, &c. &c. With 264 Illustrations. Philadelphia, Lindsay & Blakiston, 1854: 8vo. pp. 810.

2. *Elements of Human Anatomy: General, Descriptive, and Practical*. By T. G. RICHARDSON, M. D., Demonstrator of Anatomy in the Medical Department of the University at Louisville, &c. &c. Philadelphia, Lippincott, Grambo, & Co., 1854: 8vo. pp. 734. With 269 Illustrations.

THE prominent object of the author of the first of these two works seems to have been to provide a text-book on anatomy for "dental students." Dr. Handy has observed that these gentlemen "are slow to see and feel the necessity of a knowledge of any more of anatomy than so far as the teeth and their immediate connections in the mouth are concerned." This he thinks a very narrow view to take, and is desirous that students of dentistry should aspire after a wider range of knowledge. He does not, however, intend his book for them only, but for medical students likewise.

The author's plan is sufficiently comprehensive. He first gives a general sketch of *organization*, together with the most notable peculiarities of organized, as contrasted with inorganic, bodies, and some of the special points of interest in connection with different classes of animals. The *elementary tissues* of the human body are next described. Finally, the different *anatomical regions*—the head, the trunk, and the extremities—are separately analyzed and explained; the associated organs being described, as far as possible, in their functional order and dependency.

We regret that we cannot commend the manner in which the author's laudable purposes have been accomplished. The book is voluminous enough to admit of full and accurate descriptions of the different tissues and organs of which the human body is composed. But, partly in consequence of the introduction of a considerable amount of matter which pertains rather to a text-book of physiology than anatomy, and which, under the circumstances, should have been omitted, or else very concisely disposed of, we find the descriptions of important subjects vague and meagre. To this sweeping generalization, we must make an exception in favour of that portion of the book which relates to odontology, to which seventy pages are allotted. But the same, or a greater, amount of information might have been conveyed within a much smaller compass. The illustrations, too, are generally very poorly executed, as if made years ago. In short, the student of medicine or of dentistry may, without much difficulty, provide himself with a more profitable aid and guide than this, from among the numerous text-books on anatomy with which he is already acquainted.

We are much more agreeably impressed by Dr. Richardson's volume. It is intended, as we infer from several passages, rather as a companion and assistant in the *dissecting-room*, than as a complete exponent of the state of knowledge upon the subject of anatomy in any of its departments; and, with this limita-

tion, we can speak favourably of the book. It is written in a plain, lucid style; the descriptions are generally accurate, and the illustrations are good. It is somewhat peculiar in respect to the nomenclature which the author employs; very many of the frequently-inappropriate-and-hard-to-be-remembered Greek and Latin names being discarded for simple English words. F. W. S.

ART. XX.—*Tableau of the Yellow Fever of 1853, with Topographical, Chronological, and Historical Sketches of the Epidemics of New Orleans, since their Origin in 1796, Illustrative of the Quarantine Question.* By BENNETT DOWLER, M. D., Corresponding Member of the Academy of Natural Sciences of Philadelphia, etc. etc. New Orleans, 1854. 8vo. pp. 66.

In the sixty-six pages of which this pamphlet consists, Dr. Dowler has contrived to condense more matter of an important and instructive character bearing directly upon the etiology and character of yellow fever, than would suffice, if fully developed, and examined in all its relations, to fill a goodly-sized volume of several hundred pages, and that, too, without any undue extension of subject or prolixity of style.

Amid the numerous points briefly touched upon by the author, as he passes his tableau rapidly before us, are embraced many important theses that we should be pleased to see more fully investigated by such as have the time and talent for the necessary research, and a mind habituated to strict logical analysis and deduction.

The first four chapters of Dr. Dowler's pamphlet are devoted to a brief, but still highly-interesting, chronological notice of the yellow fever epidemics of New Orleans, from their first occurrence, in 1796, to that of 1823, with a passing reference to the collateral range of these epidemics, their topography, and the insufficiency of any quarantine regulations as a protection against their influence.

Of the quarantine first carried into effect in New Orleans in 1821, Dr. Dowler remarks as follows:—

"The quarantine had been tried for three years, and yet two epidemics had occurred. The contagionists began to waver, and the joint committee of both houses of the legislature, disagreeing on quarantine, were discharged from the consideration of the same on the last day of November, 1824.

"Experience, which is ever opposed to false theory, convinced the public that quarantine was not only useless, but supremely mischievous in a city so exclusively commercial that a free, untrammelled trade, with freedom of ingress, egress, and progress, is not simply useful only, but a social necessity, involving the question of subsistence or starvation. Accordingly, on the 19th of February, 1825, the legislature repealed the quarantine laws which it had enacted just four years previously; at the same time, the quarantine grounds were directed to be sold. During the eight years that followed, without quarantine, the yellow fever diminished. It never equalled that which took place under the strict quarantine of 1822, when, according to some authorities, 2,000 died of that malady, although the records which I have examined, show only 808—a number sufficiently appalling in the comparatively small population then resident in the city, especially during the hot season; the whole reported mortality for the three months ending with October being 1,362. The ratio of mortality in the Charity Hospital was enormous; out of 349 admissions, 239 deaths, and only 98 cures took place. The maximum mortality upon one day rose to 80—of yellow fever, to 60."

The idea of preventing the occurrence of yellow fever in a city like New Orleans, or, indeed, any other in which there exists all the local causes necessary for its production, by the strictest quarantine, is, in the present state of medical knowledge, supremely ridiculous. Still, we should not be inclined to

advocate the entire abandonment of all quarantine regulations. It is certainly not prudent to permit a vessel, especially during the hot season of the year, to come to one of the wharves of a city, and there unload her cargo, before due precaution had been taken for her thorough ventilation, and to ascertain that no portion of her cargo was in a condition calculated to produce disease.

That the yellow and other malignant fevers may be introduced amid a community by the impure air generated in the hold of a foul vessel, especially when crowded with passengers, or having on board damaged goods of a certain description, cannot, we believe, be disputed. And, although the disease thus introduced may not spread beyond those engaged in unloading such vessel, or those who reside in the immediate vicinity of the wharf at which she lies, it, nevertheless, shows the importance of guarding, at all times, against the introduction of disease from this source, by judicious quarantine regulations.

"The geographical area of yellow fever in 1853," remarks Dr. Dowler, "compared with former invasions, was greatly extended, including Florida, Alabama, Louisiana, Mississippi, Arkansas and Texas—six States of the Union of vast territorial expansion, consisting of alluvial, diluvial, and tertiary formations, valleys, dry prairies, elevated plateaux, irregular terraces, low undulating hills and bluffs, and pine woods, interspersed with bayous, lakes, shallow basins, shaking prairies, large bays, dense cypress swamps, cane brakes, colossal grasses, inundated plains—a region undisturbed by volcanic action, where the geological or telluric causes of disease, if such be really regarded as causes, must be nearly uniform. Of these States, five are washed by the almost tideless Gulf of Mexico, presenting a vast depressed, marshy, sandy, shelly, rockless littoral, which curves from the Rio del Norte to the peninsula of Florida, deeply indenting the temperate, yet approaching the torrid zone, having low outlying islands in front, and numerous great rivers flowing through the background, bringing detrital matter from the high lands and primitive formations of several mountain chains, with tertiary limestones and coral reefs, trending along its eastern portion upon the Floridian peninsula.

"As immense importance has always been attached to the topography of yellow fever, which has been generally attributed to swamp-exhalation, it will be necessary to take a closer view.

"The elevated zone called the bluffs, a broken diluvial plateau, touching the Lakes Pontchartrain and Maurepas on the south, where it is most depressed, running north between the Pearl and Mississippi Rivers; the eastern shore of the latter, for hundreds of miles, with some interruptions, is overlooked by these impending terraces, which sustain forests of colossal magnolias, pines, oaks, liquidambers, &c.—a platform which sundry learned medical writers have indicated as a secure retreat from yellow fever, although neither the past nor the present justify this theoretical view. The epidemic of 1853 raged fully as much in this region as in the most depressed plains among the vast cypress swamps and salt-water marshes of littoral Louisiana. The epidemic was most fatal in this region, from its southern border upon the northern shore of Lake Pontchartrain, at Madisonville, Mandeville, Louisburg, and Covington, to the higher lands of Baton Rouge, Clinton, Port Hudson, Jackson, Bayou Sara, St. Francisville, Fort Adams, Natchez, Grand Gulf, Yazoo, and Vicksburg, not sparing the little villages of the piny forests.

"Thus the towns of Louisiana, Alabama, and Mississippi States, elevated from 20 to 400 feet, and more, situated on the tertiary formation, often in the pine lands, remote from swamps, being high, dry, and clean, suffered more, in many instances, than New Orleans, situated, as it is, upon the recent alluvium, or newer pliocene, touching the river in front, and dipping into the stagnant swamps of the cypress basin in the rear, and intersected everywhere with filthy gutters, sewers, ditches, or canals. The elevated zone of pine woods in northern Louisiana, and elsewhere in the adjoining States, forms a striking contrast to the depressed plains, cypress basins, and marshes of the southern delta. The epidemic of 1853, like previous ones, goes to prove that miasmata is not the specific cause of yellow fever, as is generally supposed. The very towns which the lamented Drake recently designated, on theoretical grounds, as safe retreats from yellow fever, have suffered most from it."



After presenting a slight outline of a few towns in which the yellow fever appeared in 1853—some in elevated, some in depressed situations—Dr. Dowler remarks that, from this imperfect geographical enumeration, it is evident that *altitude* did not modify the epidemic of 1853. The general opinion that yellow fever appears only in depressed localities, or marshy plains, is contradicted by innumerable facts observed in this country as well as in Europe.

"Without," says Dr. Dowler, "the remotest wish to add another to the many futile expositions of the specific cause of yellow fever; I may be allowed to refer to two coincidents which attended the first and last epidemic irruptions of this disease in New Orleans. The original basin of Canal Carondelet was excavated in 1796; the capacious basin now being excavated for the same canal, about a mile from the city and from the former, was, to a great extent, dug out just before the epidemic. Frequent visits to this spot, with the view to its geological character, gave me opportunities of noticing whatsoever transpired in that district in the spring, before the epidemic appeared. The labourers, nearly all Irish, enjoyed very good health, although the emanations from the bayou, where the scene of labour lay below the terminus of the old canal, were most offensive. The water was so impure that many of the fish were killed, adding to the offensive effluvia. This, however, was attributed, not so much to the filth from the streets, as to the deleterious refuse matters from the gas-works of the city."

In reference to the generally-admitted influence of frost on the arrest of yellow fever, we quote the following facts as stated in the work before us:—

"About the 25th of October, a white frost appeared, for a few nights, at many of the interior towns of Louisiana, which was received as the harbinger of returning health, but which did not, in a marked degree, arrest the march of the epidemic. Warm weather, however, soon returned, and has continued to the present (the third week in December); but this did not revive the epidemic in places where it had declined, as in New Orleans, and many other places.

"In the town of Clinton, in the parish of West Feliciana, lying between the Mississippi and Pearl Rivers, 100 miles northwest from New Orleans, the epidemic began about one month before this frost, but at the latest dates (December 10th) it had not yet disappeared—75 having died out of 350 or 400 who did not fly from the town, as did about 1,000 persons. Several blacks died.

"In places," says Dr. Dowler, "where the epidemic had steadily and greatly declined, the return of absentees, and the influx of strangers, did not reproduce the epidemic, as was generally expected. The arrival of absentees, mariners, steamboatmen, and immigrants, amounting to about 50,000, in New Orleans, did not, in any appreciable degree, affect the ratio of declination. The mortality, from yellow fever, officially announced for the week ending December 18, 1853, being three, discloses a fact of supreme significance against the contagiousness of this disease, inasmuch as the city is, if any city can be, reeking with contagion."

The sixth chapter is devoted to a consideration of the mortality from the yellow fever of New Orleans and Mobile, during the epidemic of 1853. In the former city, the entire mortality is estimated, in round numbers, at 8,400.

"The maximum mortality of the yellow fever of 1853 arrived sooner in the season than usual, and is more truly represented by that of the plague in London, in 1665; namely, June 590 deaths, July 4,129, August 20,046, September 26,230, October 14,373, November 3,449; total, 68,817.

"According to the report of the Howard Association, published late in December, the Society had under its care during the epidemic of 1853, no less than 11,088 yellow fever patients—5,203 males, 5,885 females—of whom 2,942 died, and 8,146 were cured. Expenditure, \$159,190 32. Average for each patient about fourteen and a third dollars. Of this number (5,845), much more than half were Irish; German (2,890), nearly a quarter; French, 436; United States (716), less than one in sixteen of the whole. Hence, it appears that Ireland and Germany give 8,735; other countries, 2,353.

"The Association, during the epidemic, received, from all parts of the Republic, the sum of \$228,927 46; more, indeed, than they had need of, leaving a large surplus to be put out at interest for this charity.

"Omitting Spain and the United States, the yellow fever zone contributed but nineteen; the plague zone of the east, as Palestine and Greece, but seven to this formidable aggregate of 11,088.

"The predominance of female patients in the above enumeration is remarkable, inasmuch as that sex is the least susceptible to the yellow fever, and contribute to the mortality from this disease in a ratio greatly inferior to males. The most probable explanation is this—females preferred the Howard hospitals to the charity hospitals and the city hospitals established by the Board of Health."

From an examination made by Dr. Dowler of the interments during the prevalence of the epidemic, he arrives at the conclusion that the entire mortality of females, for 1853, was half as great as was that of males.

"This high ratio of female mortality is, however, one of the most extraordinary features of the late epidemic. Of 1,450 who died of yellow fever in August, September, and October, 1841, but 220 were females, or nearly one in seven. The ratio of mortality among children will probably be found enormously high from fever in 1853, compared with preceding years. This will appear obvious by Mr. Maginnis's list, compared with the following extensive analysis of the epidemic of 1841: thus—I made thirty-three series, each consisting of thirty persons; I then took the youngest one in each series (among these 990 dead), which gave these ages: 15—17—17—2—5—20—19—16—20—17—15—17—18—19—8—2—7—18—18—19—8—6—8—2—15—3—18—14—2—18—3—5—19. Scarcely an infant in the whole series.

"In order to test, approximatively, the ratio of infantile deaths from fever, I counted the ages of all fever victims who were interred in the following cemeteries on the 10th of August, namely, Cypress Grove, No. 1 and No. 2, and St. Patrick's, amounting to eighty-nine known ages, and two called "infants" (say ninety-one), among which were two aged 2; one aged 3; one, 4; which, with the two infants, make six out of ninety-one—a result which could not have been anticipated from the history of anterior epidemics, as the very young and very old, as well as women and negroes, had always suffered less than other classes."

Chapters seven and eight treat of the mortality of the epidemic in 1853 among the Creole population. From the latter chapter, we present the following interesting statements:—

"Although the word *Creole*, in its usual acceptance, means a white person, it applies to all races, as Creole negroes; it even applies to the inferior animals, and things.

"It is the resident city Creole, not the country Creole—not the Creole who migrates every summer to New York, London, or Paris—that may hope for as good health as is possible to humanity, while two or three hundred others daily fall victims around him; a definition which excludes a great many called Creoles, and one often forgotten in writing on the subject of yellow fever. Hence arises many apparent contradictions among authors who use the word in different senses.

"In former, still more than in recent times, has this fundamental distinction been overlooked. In a great majority of the works on yellow fever in the West Indies, and even in Louisiana, where Creoles are said to suffer from this disease, the true explanation is, that these persons are *Creoles of the country, not of the city*; or, at most, they reside in the latter occasionally, chiefly in the winter, and are, therefore, liable to the disease, though they usually have it in a milder form than strangers, and very rarely die.

"The simple fact of being born in New Orleans is not, in itself, protective. Thousands are thus born of uncreolized parents, who pass through the city, as immigrants, or who reside in the city in the winter only. Their return to the city might, in this way, swell the number of the so-called Creoles to hundreds every epidemic.

"City creolism is here used as a more precise and restricted term than acclimation, and denotes that immunity from yellow fever, whether transmitted from parents born and resident in the city, or that immunity acquired by long resi-

dence, with or without having suffered an attack of the disease; in any case, it is for the most part hereditary—the exception consisting of a susceptibility to a slight fever, as proved in 1853.

“City creolization is not peculiar to New Orleans, Mobile, Charleston, Havana, or Vera Cruz; but there are many new southern towns, or rather new aggregations of new-comers, where its influence is less obvious, certain, and uniform, or places where it may fail altogether.

“Congenital city creolism, that is, the constitutional modification incidental to the being born of Creole, or thoroughly creolized parents, with continuity of city residence, exempts the individual from yellow fever with nearly the same uniformity that vaccination prevents the smallpox or varioloid. The varioloid is, as all know, modified smallpox, happening to one who has undergone vaccination, or the smallpox previously, the frequency of which is probably as great as the frequency of yellow fever among city Creoles who have never absented themselves for one or more winters in northern climates.

“All born beyond the limits of the city are susceptible to yellow fever on coming into the city, or into a village when yellow fever prevails. In 1853, yellow fever has, for the first time perhaps, prevailed to some extent in the rural districts, remote from towns, among isolated persons who had not visited them. But, in almost all of these instances, the disease prevailed in aggregations of people which are virtually towns—as the plantations where the population is concentrated at one centre, often forming a village of from 100 to 500 or more persons. But, in the present state of our knowledge of the prevalence of yellow fever in the rural districts in isolated families, scarcely anything can be pronounced positively as to the extent or frequency of attacks among such as had no connection with towns as visitors. Whether, on the other hand, city Creoles who have removed to the country, who have never resided one or more winters in northern latitudes, have in any instance suffered an attack in the country, or on returning to New Orleans, is unknown. Second attacks are rare.

“Creolization in the city, with or without having had yellow fever, is equal, as a protection against yellow fever, to congenital or native creolism. This immunity is usually acquired in less than ten years, often in five, but to this rule very many exceptions occurred in the extraordinary or exceptional epidemic of 1853.

“City immunity, native or acquired, in similar cities—as New Orleans, Charleston, Mobile, Pensacola, Havana, Vera Cruz, and other places in the present limited yellow fever zone, is probably identical and mutually protective in all such places, while nativity in cities once in the yellow fever zone, in which yellow fever has not been prevalent for many years—as in Baltimore, Philadelphia, New York, Boston, Cadiz, Seville, and other places—affords no protection.

“City creolism, both native and acquired, is, to a great degree, as before remarked, hereditary, or transmissible from parents to children. At least, the exceptions to this law are few, and fatal results almost unknown, as may be proved by the bills of mortality, though this is, like many other indubitable truths, boldly denied, particularly since the decline of the epidemic of 1853—the most mortal, erratic, and extraordinary ever seen in New Orleans. It will have been seen what warrant the terrorists have for denying creolization.

“Setting aside the epidemic (of 1853), and reasoning from what is fully proved by the past—the best expositor of the present—it will be seen what little foundation there is for the utter rejection of creolism and acclimatization, which, in former years, was rung, and is still ringing, in the public ear.

“That many Creole children had, during the epidemic of 1853, a fever—a slight fever—yellow fever, if you please, known as such rather by the coexistence of the epidemic than from any severe symptoms among these children—a slight fever, never yet described, having generally but one paroxysm, lasting from six hours to one, two, or three days, scarcely ever requiring medication. That a few of these cases acquired an alarming violence, and even proved fatal, is most true—most deplorable. It will, no doubt, be found, upon a full examination of these fatal cases, that nearly all belonged to the following classes and conditions: although born in the city, their actual residence has not been

continuous, but has vibrated, like a pendulum between the country and the town, between northern schools and cities and New Orleans; or they have been born of unacclimated parents, whose continuous residence has been less than ten years, often not that of many months; or they have been born of parents one of whom is not acclimated; or, finally, they have been born while the parents resided temporarily in New Orleans (constituting a large class), and hence called Creoles, who, subsequently having come to the city, fell victims, and hence appear in the mortuary certificates as natives of the city."

We pass by the ninth and tenth chapters—the one on the liability of the African and Indian races to the yellow fever, and the other on the meteorology of the summer of 1853—both full, it is true, of interesting facts, to notice a remark made by Dr. Dowler in the next chapter, which treats of the sanitary condition of New Orleans. After the statement that—

"Enough is already known of the science of hygiene to warrant the conclusion that our crowding filth, a want of ventilation, incomplete drainage, and humidity, must be injurious to the health and detrimental to the physical comforts of the citizens of New Orleans. Healthy individuals, and still more the sick ones, need pure air, both when there is and when there is not an epidemic."

The author proceeds to notice the almost physical impossibility of any effectual underground drainage in New Orleans, from the peculiar position of the city below the level of the River Mississippi, and then remarks:—

"A gentleman recently from Paris, and, perhaps, the ablest quarantinist in New Orleans, informs me that in Paris, where underground drainage, with a soil elevation and declivity so vastly superior to New Orleans for this purpose, is mischievous. The Parisians find that the filth of the city accumulates in these subterranean sewers so as to send forth the most offensive and deleterious emanations. Hence, they prefer, after costly experiments, surface drainage, and wash off the filth into the Seine."

Now we think that there is some mistake in this. Paris has certainly not abandoned her plan of subterranean sewerage.

Underground drainage is invariably to be preferred, wherever there is no physical impediment to its adoption—as in New Orleans—to surface drainage. A proper construction of the sewers, together with their inlets, will obviate all inconvenience and danger that would otherwise arise from the accumulation of filth within them, or from the discharge of offensive or injurious gases at their openings. In a sanitary point of view, ample experience has shown that surface drainage is, excepting under very peculiar circumstances, in every respect, inferior to a properly-planned, and well-conducted system of underground sewerage.

In chapter twelve, we find some sensible remarks on the subject of contagion and infection in reference to yellow fever, and on the propriety of emigration as a means of avoiding the disease.

With the mass of those American practitioners who have had the most ample opportunities of studying the etiology of yellow fever, Dr. Dowler denies its contagiousness. All the facts he has been able to collect have convinced him that, beyond the range of the epidemic influence—of the infected districts—there is no danger of an attack, however close may be the contact with those labouring under the disease, who have been removed from the locality where they were attacked.

There is probably much truth in the following remarks of Dr. Dowler:—

"Epidemics have not only a limited period of increment and decrement in any one year, but they usually have more prolonged periods of increment and decrement, through series of years, often constituting what may be called a cycle of variable duration, after which they generally cease. So it was with the plague in Europe; so it was with the yellow fever in the Spanish peninsula; so it was with the cities of the United States in the north—as Boston, New York, Philadelphia, Baltimore, and other places. Its invasion of the southern tropic at Rio, so recent and severe, together with its gradual decline in the north temperate zone, may be the precursors of its further northern declination, and southern advance; so that both Charleston, Mobile, New Orleans, and other southern towns and districts have now, at least, the same probabilities in favour

of approaching exemption, that many other cities further north had, more than half a century ago, before yellow fever appeared on the banks of the Mississippi. New Orleans is now, and has long been, near the northern border of the yellow fever zone. If yellow fever has, as may be the case, reached its culminating point in this city; its history elsewhere in the temperate zone indicates a progressive decline."

We close our notice of the work before us, with the following quotation from the remarks of Dr. Dowler in reference to the "*ens epidemicum*." We entirely agree with him that "it is better to acknowledge ignorance than to advocate an error. It is better to keep a question of this sort open, than dogmatically to close it against investigation. In the former case, the truth may be discovered; in the latter, never. To know ignorance is preferable to ignorance of ignorance."

"It is most certainly the duty of every writer on yellow fever," says Dr. Dowler, "to explain the cause of it if he can, but it is equally his duty not to sin against the decalogue of logic, any more than against the decalogue of Moses. Fortunately, the *conditions*, if not the *causes*, of yellow fever are, to a considerable extent known: for example, it is known to be connected, no matter how, with the warm season of the year, with unacclimated constitutions, with aggregations of people in towns and villages, etc. It rarely attacks rural populations, unless they crowd together so as to become virtually towns.

"A correct appreciation of these conditions is next in importance to the discovery of the cause of yellow fever—probably the former may prove, after all, to be more important; for the discovery of the cause by no means warrants the conclusion that it is necessarily a removable or a remediable one."

D. F. C.

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ART. XXI.—*Essay on the Mechanism and Management of Parturition in the Shoulder Presentation.* By Wm. H. BOLING, M. D., of Montgomery, Alabama. Charleston, 1853. 8vo. pp. 91.

THIS is a most able and instructive essay on a subject of deep interest to the practitioner of obstetrics. On every point connected with that subject the author has presented the facts and observations recorded by the leading authorities, with their views and instructions, and has carefully compared these with the results of his own experience and reflections.

The description of the cases included under the general term of shoulder presentations; the examination of the probable cause to which these malpresentations are to be attributed; the account of the symptoms which should lead us to infer their occurrence, whether constitutional or tangible; the explanation of the mode of determining the position in which the shoulder, whether the right or left, presents; the remarks on the mortality attendant upon this variety of malposition; on its spontaneous termination, by version or evolution; on its complication from a descent of the arm, and the exposition of its proper management under the several circumstances in which the obstetrician may be called upon to act, as presented by Dr. Boling in the essay before us, are all marked by that sound sense and judgment which were to be anticipated from a well-informed, experienced, and observing practitioner.

From a careful study of the essay of Dr. Boling, clear views cannot fail to be acquired of the nature and management of a condition of parturition, which, when it occurs, is always perplexing to the inexperienced obstetrician, and even to the most skillful a source of no little solicitude.

Dr. Boling believes that spontaneous delivery, in cases of shoulder presentation, is possible more frequently than is generally supposed. Even in a majority of instances occurring among women in the South, including negroes and whites, he supposes the child may ultimately be expelled by the natural powers; often, he adds, it is true, at the expense of much constitutional suffering to the

mother, perhaps subsequent death, and, with a rare exceptional possibility, the death of the child. He does not, however, in consequence of this opinion, propose any alteration of the doctrines of practice; for these, he remarks, are proper as they now stand, even under this view of the question. "But it would be a comfortable consideration to the practitioner, when he finds the operation of version improper or impossible, because he may have been called too late—as is too often the case where females attend to the ordinary obstetrical practice—or from any other cause, that he has a reasonable ground to believe that his case is not of so grave a character altogether as has been supposed."

However much comfort it may afford the practitioner, under the circumstances just noticed, to know the spontaneous delivery is possible, and often does occur in cases of shoulder presentation, still, even in the cases referred to, it would not be proper to endanger the mother's life by putting off too long a resort to eversion and withdrawal by artificial means of the fœtus, in hopes of the occurrence of a spontaneous termination of the labour. In the early stage of a case of shoulder presentation, the possibility of such a termination should in no degree delay or influence the action of the physician; but, as Dr. Boling very correctly teaches: "In all cases in which the soft parts are well relaxed, and the os uteri fully dilated or dilatable, and the labour has not advanced so far, or the membranes been ruptured so long, and the uterus so forcibly contracted upon its contents, as to render the operation impracticable, without the exertion of a considerable degree of force, we should at once proceed to deliver by version. Where the membranes are ruptured, immediate action is the more imperatively called for, to avoid the increased difficulty to the operation which would be occasioned by the complete escape of the liquor amnii, and the rigid contraction of the uterus upon its contents."

The author's description of the mechanism of the process of spontaneous evolution in cases of shoulder presentation differs from that laid down by the leading writers on obstetrics; very materially, indeed, from that given by some, while from that presented by others its difference is less notable.

It is deserving of a careful examination; being, apparently, more nearly correct and exact than the descriptions usually given in the books. Were it not for its length, we should have been disposed to lay it before our readers.

Dr. Boling's directions for the management of cases of shoulder presentation are at once clear, precise, and judicious. We have not detected any important point in which they differ from those given by our most authoritative obstetricians, and usually followed out in practice. The views of the leading teachers of midwifery, in relation to the proper conducting of cases of parturition with shoulder presentation, are, in fact, adduced by the author in illustration or support of his own.

We are not informed whether the essay before us has been published for general circulation, or simply printed for distribution among the immediate friends of the author. It is one, we are convinced, that is well adapted for the instruction of the student, and to serve as a useful guide to the young practitioner, when the "troublesome task" of attending upon a case of parturition with presentation of the shoulder of the fœtus shall fall to his lot. D. F. C.

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ART. XXII.—*General Therapeutics and Materia Medica; adapted for a Medical Text-Book.* By ROBERT DUNGLISON, M. D., Professor of Institutes of Medicine, &c. in Jefferson Medical College, in Philadelphia, &c. &c. With one hundred and eighty-seven illustrations. Fifth edition, revised and improved. Philadelphia: Blanchard & Lea, 1853. 2 vols. 8vo. pp. 556, 523.

WHEN the demand for any work is such, as in the one before us, to exhaust four editions, and to warrant the issuing of a fifth, we have tolerably conclusive evidence that it is one adapted to supply the wants of that class of readers for which it has been expressly prepared.

The treatise of Dr. Dunglison constitutes, unquestionably, a most excellent text-book for the use of students in the departments of medical science of which it treats. It presents a very faithful and able digest of the leading results of modern observation and reflection on the important questions of the action, mode of operation, and therapeutic effects of the principal articles of the *materia medica*; with a brief sketch of the natural and commercial history of the drugs in common use. Nor will the treatise be found unworthy of the notice of the practitioner as a ready and trustworthy book of reference, when the time and opportunity for consulting many and more copious works is wanting.

With his usual industry and accuracy, Dr. Dunglison, in the preparation of the present edition, has, besides thoroughly revising that portion of the treatise which relates to pharmacology, paid due attention to the facts and trustworthy observations, in reference to the several subjects embraced within its scope, that have been recorded, either at home or abroad, since the appearance of the last edition, so as to render it a faithful epitome of the existing condition of general therapeutics and *materia medica*.  
D. F. C.

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ART. XXIII.—*Institutions for the Insane, in Prussia, Austria, and Germany.* By PLINY EARLE, M. D., one of the Visiting Physicians to the Lunatic Asylum of the City of New York, &c. Utica, 1853. 8vo. pp. 229.

IN the volume before us, Dr. Earle gives, in an interesting form, the record of a very extensive personal examination of many of the numerous institutions for the insane in Prussia, Austria, and Germany.

Familiar as we have become with all the prominent hospitals for the treatment of mental disease in Great Britain and France, only a limited number beyond these countries have been seen by any of our professional men, who have visited Europe for the purpose of profiting by the improvements which, within the last twenty or thirty years, have been introduced into most of these institutions. "A general impression appeared to prevail, indicated, it is true, more by negative than positive signs, that, aside from the countries mentioned, the nations of Europe had made but little progress in this department of the profession, and hence could furnish us nothing commensurate with the labour and expense necessary to its acquisition," and yet the literature of the Germans on this branch of medicine is able and voluminous. Much of it is, perhaps, unprofitable, as being devoted to a zealous advocacy of specious theories, but still containing a great amount of valuable information, and exhibiting very strikingly the talent and industry which, in that region, are devoted to the study of mental diseases.

Various institutions for the care of the insane, too, are to be found, throughout these countries, which have a deservedly high character for their liberal arrangements, and the admirable manner in which their whole service is performed.

During the summer of 1849, Dr. Earle visited many of these institutions, under peculiarly favourable circumstances for obtaining a knowledge of their actual condition. Long devoted to the study of diseases of the mind, and for several years engaged in the superintendence of a large American Hospital, he went abroad with a degree of practical knowledge of the subject, and a familiarity with the wants of such establishments, which rendered him well qualified to judge of the excellences, as well as the defects, which are to be found in abundance in the different German institutions.

The first chapter of the work before us is devoted to a brief history of insanity in Germany, of the German periodical and other literature on the subject, and an interesting notice of the prominent men who have been distinguished in this specialty—which, although receiving only a brief notice at our hands, will well repay an attentive perusal.

The following estimate of German hospitals, as compared with our own, is interesting:—

"A large proportion of the buildings occupied as hospitals or asylums for the insane in Germany, were formerly monastic establishments. Their architectural arrangements are not only of a former age, but were adapted to a different purpose, and hence are less convenient than most of our institutions. Still, their conversion into asylums for the insane has already been productive of at least one advantage. It has accustomed the officers of these institutions to large rooms, so that, in the construction of new buildings, the principle of providing accommodations for the greatest number of patients in the least possible space does not enter into consideration. It is really a delightful treat to see the large, well-lighted, and airy corridors of Eichburg and the asylum at Halle. The number of cubic feet of inclosed space in the principal German institutions is probably not less than twice as great, in proportion to the number of patients, as those in the United States. Such asylums as have been recently erected, and specially designed for the purpose—as, for example, those of Halle, Illenau, and Eichburg—are great improvements upon the others, and yet, in point of convenience, are unequal to some of ours. In their asylums generally, the apartments for patients have not that finished aspect of comfort which is found in many of the American institutions. This is particularly owing to the universal absence of carpets. Yet, relatively to the prevailing customs of the people, they are probably as well furnished as ours. In the conveniences of the kitchen, the laundry, and the means of distributing food throughout the house, they are inferior. Cooking is rarely done by steam. I saw no wringing-press, and no dumb-waiter. Mechanical appliances for the purpose of bodily restraint, are probably somewhat more extensively used than upon this side of the Atlantic."

It appears that, during this visit, Dr. Earle found several establishments in which he was shown through only a portion of the wards, and occasionally he had no opportunity of seeing those for violent patients. We trust few, if any, American superintendents can be found but that will cordially agree with Dr. Earle, that when a professional brother, engaged in the same specialty, visits an establishment for the purpose of becoming familiar with its arrangements, it is a duty, and ought to be a pleasure, to conduct him through every ward, and to throw open every part for his inspection. The credit should be given such a visitor that he comes "to learn the advantages of the institution, not to seek for demerits or matters for cavil."

In regard to moral treatment, Dr. E. considers the German asylums fully equal to those of the United States. "In the most important point of all—if reference be had to curative treatment, or the quietude, order, and hygienic condition of the patients—that of manual employment for the inmates, they are superior. The radical source of this superiority lies, undoubtedly, not in the more ardent wishes, or the greater efforts, of their superintendents for the welfare of their patients—for, in these respects, none can excel the officers of the American asylums—but in the education of the people, and the nature of the political governments under which they live. Obedience to authority becomes, by education, more a matter of principle or of habit. Furthermore, the asylums are more independent than ours, and the retention and management of patients more optional with the officers."

Of the forty-nine public, and eight private, establishments of which mention is made, and a more or less extended description given, in the volume before us, seventeen were visited by Dr. E. They embraced those of Sieberg, Andernach, Eberbach, Frankfort, Dusseldorf, Hildesheim, Halle, Berlin, Sonnenstein, Leubus, Brieg, Vienna, Hall, Giesing, Winnenthal, Illenau, and Stephansfield. Nine of these are among the thirteen which Dr. Julius calls the best in Germany.

Want of space prevents our giving a more extended notice of the author's visit, or referring to the many interesting facts and judicious criticisms scattered through the volume. We can heartily commend the work to the attention of all who take an interest in the insane, or are disposed to become familiar with the views of prominent German physicians on this important subject, and



# QUARTERLY SUMMARY

## OF THE

### IMPROVEMENTS AND DISCOVERIES

#### IN THE

### MEDICAL SCIENCES.

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#### ANATOMY AND PHYSIOLOGY.

1. *On the Human Retina.*—In a memoir read before the Academy of Sciences, Sept. 26, 1854, by KÖLLIKER and H. MÜLLER, they announce some important investigations relative to the structure, the connection, and the probable function of the different parts of the retina. They describe the following layers: 1. Rods and cones; 2. Nucleiform bodies; 3. Gray substance; 4. Expansion of the optic nerve; 5. Limiting membrane. Passing over the last, it has been discovered by Kölliker that the expansion of the optic nerve is interrupted at the macula lutea, which exhibits no trace of nerve-fibres, while the nerve-cells form there a very thick layer of nine to twelve superimposed rows. In other parts, the termination of the nerve-fibres of the retina directly in the nerve-cells has been fully confirmed, the fibres becoming continuous with the processes, one to six in number, which these cells present, resembling entirely the prolongations of the ganglionic corpuscles of the brain and nervous ganglia. The nerve-fibres may, therefore, be said to originate from the nerve-cells. The cones (hitherto imperfectly described), are thicker and shorter than the rods, on the inner part of which they are placed; they present externally a prolongation resembling a short rod; they are pretty regularly set, and at the macula lutea, where the rods are entirely wanting, the cones are abundant, and form a continuous layer. From the internal part of each cone and rod there proceeds a fibre which passes through all the layers of the retina, and becomes lost on the inner surface of the limiting membrane. These fibres, first observed by H. Müller, in animals, are in relation with the nucleiform bodies; they have been named "fibres radiæres," and are probably of great importance in regard to the functions of the retina.

From their observations, the authors conclude that the nerve-fibres of the retina do not serve for the objective perception of light, because they are deficient at the macula lutea, where vision is acute, and because the optic nerve itself is insensible of luminous impressions. It is improbable that the nerve-cells, or nucleiform bodies, which exist in several superimposed rows, can give rise to any very exact visual impression. The cones and rods remain, therefore, as the most likely parts to receive the impression of light, of which the Mosaic-like disposition would render the sensation as definite and exact as possible. The authors, however, have not completely demonstrated the connection by which such impressions could be transmitted to the fibres of the optic nerve; but they suppose that this communication takes place—1st, by means of the radiary fibres, which connect the cones with the nucleiform bodies; 2d, by means of the processes of the nucleiform bodies, which, becoming continuous with the external processes of the nerve-cells, would complete the commu-

nication from the nucleiform bodies to the nerve-fibres of the retina. However this may be, the authors conclude that the nerve-cells are the organs for the direct sensation of light, either immediately or by the intervention of the cones, rods, and radiary fibres; that these cells form a true ganglion or nervous centre, and that the optic nerve serves merely to transmit the sensations from this centre to the organ of intelligence and consciousness.—*Monthly Journ. Med. Sci.* Dec. 1852.

2. *On the Insensible Spot of the Retina in the Human Eye.*—Dr. FICK and P. DU BOIS-REYMOND differ from Volkman<sup>1</sup> in the conception of the influence exercised by the insensible spot of the retina on the perception of the image by the mind. They adopt the view that the impressions of light thrown on the insensible spot are not conveyed to the sensorium, while the impressions thrown on the other parts of the retina are perceived by the sensorium. It is well known that Volkmann and other psychologists (Waitz), are of opinion that the soul forms the idea of the dimension of objects by composing the impressions from the various parts of the retina mosaic-like, and that the piece of the object from which the rays are thrown on the insensible spot (which piece may be called "the unseen space"), falls out from the conception. The image, therefore, would be constructed smaller than the real object. Volkmann draws from this the inference that a line, the image of which is passing through the unseen spot, must be perceived as much shorter as is just proportionate to that piece of the image which is thrown on the unseen space. In opposition to this theory, the authors maintain the view that the soul possesses in itself a notion of space and dimension, and that it fills up the unseen piece of the object by a kind of deception according to certain laws. As one of the principal laws, may be regarded that the quality of the perceptions which the soul fancies to derive from the unseen space depends on the quality of those coming from the immediate neighbourhood. We propose to quote some experiments which the authors adduce in corroboration of their theory. If a black stripe be placed on a white surface in such a manner as to make its image pass through the blind spot and exceed it as well above as below, the stripe is seen *unshortened*, exactly as if its image had been thrown on another part of the retina sensible throughout the whole of its dimension (provided the stripe be not too narrow). If a part of the black stripe is cut out from its central portion and the image of the empty (white) middle space is thrown exactly on the blind spot of the retina, while the upper and lower piece remain as in the former experiment (*i. e.* throwing their image just below and above the blind spot)—the black stripe is seen or fancied *unshortened and entire*, as if the central piece were not cut out. If the image of the stripe is thrown on the retina in such a manner that one end of it falls on the blind spot, the stripe is perceived by the soul *shorter* than it is in reality, and this shortening is proportionate to that piece of the image which falls on the blind spot, the latter being filled up by the soul with the white colour of the surrounding ground. The authors do not proffer a new opinion about the cause of the insensibility of the blind spot, but on account of the extension and form of the unseen space they are not inclined to adopt the view of its being caused by the *arteria centralis retinæ*.—*Brit. and For. Medico-Chirurg. Rev.* Jan. 1854, from *Müller's Archiv.* Heft 3, p. 396.

3. *On certain Functions of the Spinal Cord.*—T. LOCKHART CLARK draws the following conclusions from investigations which he has made on the ox, calf, cat, rat, mouse, and frog: 1. That the posterior roots of the spinal nerves consist of three kinds; two of them entering the posterior gray substance at right angles, the third kind, with different degrees of obliquity, tending upwards, a small proportion only of the latter taking a longitudinal course, and becoming lost in the posterior white columns. 2. That in no instance were any fibres of the anterior roots seen to ascend with the anterior white columns, before they had entered the gray substance. 3. That besides the transverse bundles forming the anterior roots, a continuous system of exceedingly fine transverse fibres

<sup>1</sup> Wagner's Handwoerterbuch. Art. "Schen."

issue from the anterior gray substance, and become lost as they proceed towards the surface of the cord. 4. That from the preceding facts, it may be inferred that nearly all, if not the whole of the fibres composing the roots of the spinal nerves, proceed at once to the gray substance of the cord; and that, if any of them ascend directly to the brain, it must be *those only of the posterior roots* which run longitudinally in the posterior white columns. 5. That the communication between the sensorium and the spinal nerves is not established by the posterior white columns, but by the antero-lateral columns, especially the lateral. 6. That many of the fibres belonging respectively to the anterior and posterior roots in different regions of the cord, terminate there by forming with each other a series of loops of various sizes and lengths; and that it is not improbable that some of them may reach even as far as the brain. It is not perfectly denied by the author that a portion of the roots may be connected with the vesicles of the cords, but he considers the evidence of any such connection as very unsatisfactory. 7. The fine longitudinal fibres described by Stilling have not been found by the author. He is inclined to believe that the gray substance of the cord does not transmit impressions to and from the brain. 8. That there is great correspondence in the fibrous arrangement between the gray substance of the cord and the chiasma of the optic nerves. The author further remarks that the circumstance of the nerve-roots diverging upwards in the cord and intricately intermingling with each other, may explain why impressions made at one particular spot are communicated to distant parts of the cord, so as to excite simultaneous and sympathetic actions in classes of muscles which otherwise would appear unconnected.—*Proceedings of the Royal Society*, 1853, p. 297.

4. *Excitability of Cilia.* By M. VIRCHOW.—All known contractile substances may be excited to action by means of stimulation with mechanical, physical, and chemical agents. Valentin and Purkinje, however, discovered in cilia an exception to this rule, for they found that the only way in which their motions, when becoming weak, could be roused to renewed activity, was by means of *mechanical* irritation. The truth of this observation was doubted by Professor Sharpey; and Virchow has lately been experimenting on cilia to ascertain its accuracy. He has discovered, by chance, that ciliary motion is capable of being excited by two chemical agents. On adding a solution of caustic potash to a portion of epithelium from the human trachea, in which the ciliary action—originally weak—had nearly ceased, he found that the motions of the cilia became very animated, and continued so until their tissue was destroyed by chemical corrosion. He has frequently repeated this experiment, and always with the same result. Portions of epithelium which he immersed in water till the motions of the cilia had ceased, and their structure had begun to be impaired, recovered, by the application of the potash, all their normal phenomena. The alkaline solution needs to be very slowly and cautiously applied. When this is done, at first, a few cilia only begin to move, with an irregular jerking action; by and by, others follow, moving indeterminately and confusedly; finally, all are in full action, with gradually increasing force, moving harmoniously together in one direction, with the quick rhythmic, lashing action peculiar to these bodies.

If, on the other hand, the alkali be applied too suddenly, or too strong, it will merely cause a brief, convulsive movement of the cilia, followed immediately by the destruction of their substance.

Virchow considers these effects to be induced by the chemical action, and not by the corrosive power of the alkali.

Caustic soda, when applied to cilia, acts precisely as the potash solution. Ammonia, on the other hand, occasions their immediate chemical decomposition. Virchow has found no other substance which acts in the same manner as these two bodies; and, considering the vast number of chemical substances tried in vain by Purkinje and Valentin, he entertains little hope of discovering any.

He considers that the excitability of cilia—demonstrated by his experiments

—proves their substance to be analogous to the contractile structure of muscle.  
 —*Monthly Journ. Med. Sci.* Jan. 1854, from *Virchow's Archiv für Pathol. Anat. und Physiol.* Bd. vi. heft i.

5. *Discovery of a Substance presenting the Chemical Reactions of Vegetable Cellulose in the Human Nervous Centres.* By M. VIRCHOW.—In the human brain, Purkinje first described peculiar corpuscles formed of concentric layers, and analogous in structure to starch granules. Their origin and use were unknown. By microchemical examination, M. Virchow has made the curious discovery, that these "corpuscula amylacea" present the reactions of vegetable cellulose. When they are treated with an aqueous solution of iodine, a light bluish tint is produced, which contrasts strongly with the yellow colour of the surrounding parts; and, when hydrated sulphuric acid is added, the corpuscles present the bright violet colour which forms the specific character of vegetable cellulose. The constancy of this reaction has been confirmed by repeated investigations. The corpuscles of cellulose, however, or true corpuscula amylacea, belong to the ependyma, and are found only in the superficial layers of the cerebral ventricles, in the spinal marrow, particularly the central gray substance, corresponding to the ependyma of the obliterated central canal, and in the nerves of the senses, as in the gray substance of the olfactory nerve. All other concentric corpuscles, from the pineal gland, choroid plexuses, granulations of paccioni, or the (calcareous) plates of the spinal arachnoid, show no vegetable reaction. The discovery of cellulose in this situation has great interest in connection with the production of sugar in the body from lesion of the nervous centres, as shown in M. Bernard's experiments. M. Virchow, however, has not found cellulose in the rabbits.—*Acad. des Sciences*, Sept. 26.

Since the discovery of this substance in the human brain and spinal cord, M. Virchow had sought for it in most of the healthy and morbid tissues of the human body without success. He has, however, at length recognized it in that peculiar affection of the human spleen which consists in a kind of colloid degeneration of the Malpighian bodies, and is usually designated waxy spleen. (Wachsmiltz.) In this lesion, the Malpighian bodies are transformed from the periphery to the centre into a homogeneous mass of a grayish or yellowish colour, presenting the form of grains like those of boiled sago. These grains are composed of microscopic corpuscles, somewhat irregular, but quite homogeneous, which may be considered to result from the transformation of the cell contents of the splenic follicles. Treated by chemical reagents, these corpuscles are rendered pale by acetic acid, and, on the addition of a little ferrocyanate of potassa to the acidulated preparation, a granular precipitate is formed in the interstices of the corpuscles. Hot nitric acid produces a yellow colour, which becomes brownish on the addition of caustic ammonia from the formation of xanthoproteic acid. But in particular by the action of iodine and sulphuric acid, the bright violaceous colour of cellulose is struck with surprising promptitude, showing the similarity in composition of these waxy corpuscles with the corpora amylacea of the nervous centres. The exactness of the reaction was verified on specimens preserved in spirits. M. Virchow adds that this degeneration of the spleen is principally found in states of cachexia, and mostly in patients who have been the subjects of protracted ulcerous affections.—*Monthly Journ. Med. Sci.* Jan. 1854.

6. *Colour of the Hair.* By Dr. ALLEN DALZELL.—The colour of the hair, which, according to Griffith, was long attributed to pigment accumulated in the cells of the medulla, depends upon one or more of three causes. First, on pigment granules; second, on diffused colouring matter impregnating the entire tissue; and third, on the presence of air spaces within the fibres of the shaft. To these might be added the nuclei of the cells themselves, which, however, where pigment granules are present, are so surrounded by them as to be scarcely, if at all, discernible. But where their isolation has been effected by boiling with moderately dilute caustic potash, they are shown as dark bodies of an elongated form.

The colour of the hair corresponds in intensity to that of the iris; as, for

example, auburn with blue, and black with the darker tints. Nor are these relations at all confined to the human species, although especially remarkable in the Albino, whose choroid is destitute of pigment, and hair either very pale or entirely white.

Many observers have described the granular pigment which forms the first class of colouring matter, as if it was situated in interspaces of the fibres. I have, however, assured myself of the fact, that pigment is never lodged exteriorly in the cells, but always in some part of the interior, as may be plainly seen in the hairs of some *cervi*, where the entire cells are dry and empty, except of traces of colouring matter which adhere to their walls. Changes, during the growth of hair, often take place at regular intervals in the colour and amount of these deposits. This is seen in the hairs of many of the quadrumana and carnivora, to which classes it is, however, by no means confined.

In many hairs, the colour is uniform or diffused. Most animals have hairs of this kind; good examples may, however, be found in the short hairs from the face of the hare, in the tapir, and yellow bear.

*Air spaces in the shaft.*—These cavities, from containing air, refract light beyond the field of the microscope, and thus, like the cells of the axis, give the idea of colour; these are best seen in white hairs. Some authors have described them as fat-granules. This is inaccurate, for, on boiling with ether or turpentine, they become filled with the fluid; and even when treated in menstruum, which does not dissolve fat, they lose their refractive properties, and retain only their general outline. They are empty cavities situated in the cells of the shaft, produced, as Kölliker supposes, by the absorption of its granular pigment; for they are not found in any hair originally colourless, but only in such as have become so from some cause affecting their vitality. I examined a hair with one extremity entirely white, the other unaltered—the former part I found filled with air cells, the latter, pigment cells.—*Edinburgh Philos. Journ.*

7. *Human Skeleton in which there were Six Cervical Vertebrae, Twelve Dorsal, and Six Lumbar.*—HOLMES COOTE, Esq., Demonstrator of Anatomy at St. Bartholomew's Hospital, describes (*Med. Times and Gaz.* Jan. 21, 1854) the skeleton of a Chinese who died in the Hospital at Sidney, which had six cervical vertebrae, twelve dorsal, and six lumbar. The skeleton was prepared by Mr. Milford, now a student at St. Bartholomew's Hospital. He guarantees the integrity of the specimen, and Mr. C. states that any skepticism upon the point will disappear upon examining it, especially if one reflects how difficult it is to replace, under most-favourable circumstances, a lost bone. Of the six cervical vertebrae, only the second, third, and fourth have bifid spines, the spine of the axis being very strongly developed. There is no vertebra prominent, the fifth and sixth and the first dorsal spines being on the same plane.

The dorsal vertebrae present no features of special interest, the first, or that usually termed the seventh cervical, having a strong diapophysis (transverse process), at the extremity of which is a deep depression for the head of the rib.

The six lumbar vertebrae are well-made bones; the articulation between the fifth and the sixth is looser than in the white races (the same looseness is noticed in the African skeleton). The lower articulating processes of the sixth lumbar vertebra look forwards, as in the dorsal region.

"I know not," Mr. C. remarks, "whether this peculiarity is common among the Chinese. It would serve to make the neck short, and to give length and mobility to the loins. Many of these men appear, during life, remarkable for the shortness of the neck, and are distinguished for great freedom of movement in the trunk, as exhibited in climbing, or running up the rigging of a ship. The ribs in the specimen here mentioned are normal.

Mr. Coote says that he knows of no other instance in which the number of dorsal or movable ribs is twelve, forming a thorax placed one vertebrae higher up than in the normal skeleton.

## MATERIA MEDICA AND PHARMACY.

8. *Saccharine Carbonate of Iron and Manganese.*—Dr. S. T. SPEER has published (*Med. Times and Gaz.* Dec. 10, 1853) the following formula for the preparation of a saccharine carbonate of iron and manganese, which he extols as superior to every other chalybeate, and as having a complete freedom from the inky flavour of other preparations of iron:—

“Take of finely powdered sulphate of iron  $\mathfrak{z}\text{ij}$ ,  $\mathfrak{z}\text{j}$ ; carbonate of soda  $\mathfrak{z}\text{v}$ ; sulphate of manganese  $\mathfrak{z}\text{j}$ ,  $\mathfrak{z}\text{j}$ ; white sugar  $\mathfrak{z}\text{liiss}$ . Dissolve each of the three first-mentioned ingredients in a pint or a half of water, add the solutions, and mix them well: collect the precipitate on a cloth, filter, and immediately wash it with cold water: squeeze out as much of the water as possible, and, without delay, triturate the pulp with the sugar, previously reduced to a fine powder. Dry it at a temperature of about  $120^{\circ}$  Fahr.

“The compound, thus prepared, is a powder of a reddish-brown colour, and devoid of all taste, save that imparted by the sugar, with which the salts of the two metals are conjoined. The dose is 5 grs. gradually increased up to  $\mathfrak{z}\text{j}$ , three times a day; it should be given with the meals, or at least immediately after.”

9. *Opium and its Adulterations.*—The *Lancet* (Nos. for Jan. and Feb. 1854) contains an account of the microscopical and chemical examination of a number of specimens of opium.

Of twenty-three samples of gum opium as imported, it appears that no less than nineteen of them were adulterated, four only being genuine, the prevailing adulterations consisting of POPPY CAPSULE and WHEAT FLOUR, many of the samples being adulterated to a very large extent; but in two cases SAND, in one SUGAR, and in another GUM, were discovered.

Of thirty-two samples of powdered opium, thirty-one were adulterated, and one only genuine; the principal adulterations, as in the previous case, being with POPPY CAPSULE and WHEAT FLOUR.

That four of the samples were further adulterated by the addition of POWDERED WOOD, introduced, no doubt, in the process of grinding. Out, therefore, of fifty-five samples of gum and powdered opium, the results of the microscopical and chemical analyses of which have been recorded, five only were genuine.

According to the analyses of the gum opiums as imported, the amount of alkaloids was found to vary from 2.7 to 14.0 per cent.—that is, in the proportion of nearly one to five; it is probable, however, that the Egyptian opium, which furnished only 2.7 per cent. of alkaloids, had been deprived of its morphia, and it was also adulterated with an enormous quantity of some gummy substance. The two gum opiums which furnished the next lowest amounts were—another sample of Egyptian opium, which contained only 3.7 per cent., and a sample of Turkey opium, which yielded but 4.2 per cent. of alkaloids.

From an examination of the analyses of the powdered opiums, it appears:—

That the amount of alkaloids varied from 2.3 up to 12.2 per cent., or in the proportion of nearly one to six—that is, the samples differed in strength in that ratio. The lowest amounts of alkaloids furnished by the powdered opiums were 2.3 and 3.2 per cent.; these were, in all probability, exhausted opiums, which had been previously employed in the preparation of tincture.

The author states it as his belief, “that it is not an unfrequent practice with druggists to employ the insoluble residue, when dried and pulverized, left from the preparation of the tincture of opium, in the adulteration of powdered opium. We have also known it to be used for making the unguentum gallæ compositum.

“From all this, then, it follows, partly in consequence of adulteration, that crude opium varies to a great extent in strength and activity, so much so that no certain reliance can be placed on the effects produced by this remedy, administered according to any fixed or uniform scale of doses.

"It further follows that all those preparations made from opium, or into the composition of which opium enters, are of equally uncertain strength and power—as, *tinctura opii*, *tinct. camphoræ composita*, *vinum opii*, *pulvis cretæ comp. cum opio*, *pulv. ipecacuanhæ comp.*, *pulv. kino comp.*, *pilulæ saponis comp.*, *confectio opii*, *extractum opii*, *enema opii*, *linimentum opii*, and *emplastrum opii*, of the London pharmacopœia; *tinctura opii ammoniata*, *acetum opii*, *pilulæ opii*, *pil. calomelanos et opii*, *pil. plumbi opiatæ*, *electuarius opii*, and *trochisci opii*, of the Edinburgh and Dublin pharmacopœias.

"But, further than this, gum opium is possessed of very different degrees of strength, as is clearly shown by the following results, obtained by different analysts and experimentalists:—

"Chevallier found in six samples of choice Smyrna opium the following proportions of water, viz: 33.5, 35.0, 40.5, 42.25, 52.5, and 53.0 per cent.

"O'Shaughnessy found from 25 to 21 per cent. of water in Indian opium (Behar agency), and 13 per cent. in Patna opium. Dr. Eatwell, the opium examiner in the Benares district, finds that the proportion of water varies from 30 to 24.5 per cent. in the opium of that district.

"With respect to the proportion of morphia, Chevallier says that Smyrna opium contains from 5.6 to 6.4 per cent. of that alkaloid; Constantinople, from 2.8 to 3.2; and Egyptian opium, from 2.0 to 2.4 per cent.

"This subject was discussed at the Pharmaceutical Society of Paris on the 2d of April, 1850, and Mialhe stated that the proportion of morphia in commercial opium varied from 1 to 10 per cent., and this was confirmed by Soubeiran. Guibourt said he obtained from 15 to 17 per cent. in Smyrna opium, as also did MM. Caventou and Abergier. Dublin affirmed that it contains at most 14 per cent., but sometimes it is as low as 1, 2, or 3 per cent. Guillemette rarely obtained more than 14, while good specimens yielded from 10 to 12 per cent. De Vry analyzed 21 samples of commercial opium, and found the proportions of morphia to vary from mere traces to 9.2 per cent. (but his process was not a good one). Reich got from 10 to 12 per cent.; and O'Shaughnessy obtained from the opium of the Behar agency from 1.75 to 3.5 per cent. of morphia, and 0.75 to 3.5 of narcotina; in that from Hazareebaugh, 4.5 of morphia, and 4.0 per cent. of narcotina; and in Patna garden opium he extracted 10.5 per cent. of morphia, and 6.0 per cent. of narcotina. Dr. Eatwell found in the opium of the Benares district the following proportions of morphia and narcotina in the years 1845 to 1848:—

	Morphia.	Narcotina.
1845 . . . . .	2.48	5.26
1846 . . . . .	2.38	4.52
1847 . . . . .	2.20	5.68
1848 . . . . .	3.21	4.06

"These last facts show that, even if we could succeed in obtaining in all cases gum opium of undoubted purity, yet we could not rely upon its producing uniform effects. This consideration shows the necessity of employing in medicine some preparation made from this drug, of ascertained strength; this, to some extent, we possess in the salts of morphia; and, no doubt, it is far better to prescribe these, in the majority of cases, in preference to crude opium.

"But it is probable that a preparation might be obtained formed of more than one constituent of opium, and which would, therefore, more nearly resemble the complex and original drug. One method by which an approximation to uniformity of strength could be obtained in the tincture of opium, is by a previous analysis of the gum opium from which it is to be prepared, and a regulation of the dose according to the strength of that opium; or the alkaloids might be added where they were deficient, so as to insure as near an approach to uniformity as practicable.

"It should be observed that, of the previous samples of powdered opium, those which were found to contain the largest percentages of water had been kept in a tin case, and thus the moisture prevented from escaping; while most of the samples which contained the smaller percentages of water, had been exposed to the atmosphere, and so lost part of their water."

10. *Extract of Bullock's Blood*.—Dr. MAUTHNER, who introduced this remedy, writes to Dr. Behrend as follows: "I now give it to children in larger doses than formerly, to the extent of half an ounce in the day, dissolved in water. In many anæmic states, the favourable result is so striking that the parents, perceiving the improvement of their child, generally desire the continuance of the agent. In these larger doses, it is true, the drug colours the dejections of a brown hue, but it does not give rise to the least dyspeptic symptom. It has never caused emesis, and, if the child has shown some dislike to it at first, it takes it afterwards with great avidity. Children who were in the extreme stage of exhaustion, whose stomachs were so irritable that milk and beef-tea or broth were rejected by them, and cod-liver oil could not be in the least retained, bore the extract of ox-blood well, and thrived admirably." Here, in Berlin [Mauthner is at Vienna], the *extractum sanguinis bovini* is given with very good effect to chlorotic and emaciated girls, and even to phthisical adults. A colleague has found it very efficacious in rachitis.—*Journ. für Kinderkrankheiten*.

11. *Decoction of Olive Leaves in Intermittent Fever*.—Mr. MALTAS states (*Pharmaceutical Journal*) that he was in the island of Mytilene at a time when fever and ague of the worst description was raging in the island; in fact, it was so bad, that death ensued frequently after a week or ten days. The small quantity of quinia at the druggists' was soon exhausted, and he could procure none to administer to patients. Knowing that *biberine* and *salicine* were often used for fever and ague, he turned over in his mind all the bitters he could think which might prove effectual. Many were poisonous, and he rejected them; then thought of *olive leaves*, and after several trials, he commenced administering doses of a decoction of the leaves—say two handfuls boiled in a quart of water till evaporation had reduced it to a pint. This he gave in doses of a wineglassful every three or four hours. Obstinate cases of fever gave way before it, and for many years he has found it more effectual than quinia.

## MEDICAL PATHOLOGY AND THERAPEUTICS, AND PRACTICAL MEDICINE.

12. *Curability of Tubercular Meningitis*. By H. HANN.—This disease has been too generally regarded as an incurable malady. A child affected with tuberculous meningitis is a child nearly as much condemned in the sight of the parents as in that of physicians. Nevertheless, such an idea, as cheerless as it is false, is a great misfortune, for it depresses courage, paralyzes energy, and scarcely permits the evil to be combated with through the more efficacious measures. The defeat, too, seems to have nothing humiliating about it, since it is regarded as a necessity. The prejudice which attributes the character of incurability to tuberculous meningitis, only serves the purpose of shackling the progress of medical art. But we have sufficiently cleared up this question in the fourth chapter, and we have there shown that the disease is, in a very great number of cases, susceptible of cure.—*De la Méningite Tuberculeuse*.

13. *On Tuberculosis in Egypt*.—In 363 dissections at Cairo, by Prof. GRIESINGER, there was tubercle in 62 (17 per cent.), but as in 12 it was very trifling and obsolete, it should be said that there was recent tubercle in 50 (13.8 per cent.). (In Stuttgart and Prague the proportions are, according to Cless and Dittrich, whose observations are referred to for comparative data, 36—37 per cent. in both places.) It was less common in old persons; its greatest frequency was between the ages of 15 and 20; but in general terms it may be said to have been nearly the same between 7 and 40 years. Among the 363 dissections in the hospital were 333 Fellahs and ten Negroes; the proportion of tubercle was only 11.11 per cent. among the former, and no less than 50 per cent among the latter. Dr. Griesinger remarks that the disposition of Negroes



to tubercle, so common in cold climates, begins already in Egypt. With respect to the implication of particular organs—the lungs were unaffected in one case in which there was tuberculous meningitis; in all other cases they suffered. In 33 cases the disease was confined to the lungs and its appurtenances (pleura and bronchial glands); in 10 cases the lung disease was about equally advanced with disease of other organs; in 6 cases the disease was very trifling in the lungs, but was advanced elsewhere.

The amount of disease in the lung appeared less than in phthisical cases in Europe; the lower lobes alone were attacked in four cases, the extreme apices of the lungs appeared to be spared often, and the tubercle was found about the height of the second or third rib.

In 4 of these 50 tuberculous cases there was pericarditis (not apparently with tuberculous deposit at that point). The peritoneum was tuberculous in 14 cases (28 per cent., whereas in Cless's cases it was affected only in 13 per cent., and in Dittrich's in 7 per cent.). The small intestines were affected 23 times=46 per cent. (in Cless's cases 54 per cent.); the large intestines were affected in 6 cases=12 per cent. (in Cless's cases 24 per cent.). The intestines were thus altogether affected in 50 per cent., while Cless's numbers are 78 per cent., and Dittrich's 72. The mesenteric glands were affected in 22 cases=44 per cent. (in Cless's cases 25 per cent.); the liver was tuberculous in 9 cases=18 per cent. (in Cless's cases only 1 per cent.); the spleen was affected in 23 cases (46 per cent.), and between the ages of 7 and 30 this organ was affected in no less than 87 per cent.; in Europe, the frequency of spleen tubercle is much below this; the kidneys were affected 12 times (in 4 cases very greatly); this number is also much higher than in Europe; thus in Egypt in 24 per cent., in Cless's cases 4 per cent., in Louis's 2 per cent. In 3 cases there was tuberculous meningitis, in 2 cases tubercle in the brain. The following is the order in which the organs were attacked: lungs, bronchial glands, spleen, small intestines, peritoneum, pleura, kidneys, mesenteric glands, liver, large intestines, pia mater, brain.

Dr. Griesinger then remarks that tuberculosis generally, and phthisis pulmonalis in particular, are far less common in Egypt than in Mid-Europe; the causes of this are, perhaps, the mild climate, the mode of occupation, which is never hardly sedentary, and the infrequency of bronchitis and inflammatory affections of the lungs. The investigations show also the relative infrequency of tuberculosis in children; while, on the other hand, the extremely frequent implication of the mesenteric glands, peritoneum, liver, spleen, and kidneys, makes the tuberculosis of adults in Egypt approach, as far as organs are concerned, the tuberculosis of children in Mid-Europe.

The important question whether Egypt (Cairo) is a good residence for tuberculous Europeans, is answered by Dr. Griesinger in the affirmative, and cases are referred to in which the disease was decidedly arrested. Nevertheless, the disease should be in an early stage, and without bowel implication, as dysentery is very apt to ally itself to it. The patients should arrive in October in Alexandria; should go to Cairo in November, and there remain, or go to Upper Egypt or Nubia. In March, or at the beginning of April, they should leave Egypt, and go to Syria.—*Brit. and For. Medico-Chirurg. Rev.* Jan. 1854, from *Vierordt's Archiv für Phys. Heilkunde*. Heft 3, pp. 519.

14. *On Degeneration of the Glandular Structure of the Stomach.*—Dr. HAND-FIELD JONES very truly observes, that no one has yet done for the stomach what Johnson, Simon, and Frerichs, not to mention others, have done for the kidney. And yet the mucous membrane of the stomach is a true gland structure, with a general account of which he commences his paper. The principal lesions he has observed are: 1. An atrophic state of the lower end of the gastric follicles. 2. A fatty degeneration of the epithelium. 3. A fibrous hypertrophy of the submucous tissue. In short, the same organic alterations as occur in many other glands. The relation of these to symptoms has yet to be made out by more extensive researches, but Dr. H. Jones has the merit of commencing this inquiry, with the particulars of two cases. These died of

various diseases, and an account of the structure of the mucous membrane in each is given. The paper concludes with the following passage:—

"The practical results which the above investigation, as far as it has extended, supplies, are: 1. That we may expect not unfrequently to meet with cases where the digestive power of the stomach is permanently weakened by the decay of more or less of its glandular structure. 2. That, in a still greater number of cases, the digestive power is weakened from an atrophy of the epithelium, which, it is conceivable, may, by judicious administration of light, nourishing food, cod-liver oil, and gentle tonics, be reproduced in a more healthy state. 3. That we must be cautious in leeching or blistering the epigastrium for the removal of *gastritis*, which may have no existence. The further our observation extends, the more do we become convinced that the most hopeless diseases with which we have to contend are those depending on essentially chronic degenerations of organs. Who would not rather have to deal with an acute pneumonia or pericarditis, than with a case of confirmed morbus Brightii? How often does our healing skill hang its head in hopeless foreboding when our diagnosis has revealed the existence of an organic lesion! This must of course often be; but how needful then does it become that we should be thoroughly aware of these deficiencies, and exercise the utmost vigilance to anticipate and stay the changes which we are unable to reverse."—*Assoc. Med. Journ.*

15. *On Certain Pathological States of the Blood, and of their Treatment.*—Dr. JAMES COPLAND read an interesting paper on this subject to the Royal Medical and Chirurgical Society (Jan. 10, 1854). After describing the various symptoms and signs of vitiation of the blood, and noting more particularly the different changes in the secretions consequent on such vitiation, the author deduced a series of inferences on which he founded his treatment. He arranged the vitiations of the blood under certain heads or categories, according to the causes, extrinsic or pathological, producing them, with reference to the indications of treatment, and these comprehended the following seven orders:—

1. Vitiations produced by imperfect assimilation or development of the blood-globules.

2. Vitiations occasioned by the increased action of the organs, which waste or decompose the hæmato-globulin—which increase the fibrin and augment the urea.

3. Contaminations arising from the absorption of purulent, sanious, or other morbid matters, into the circulation, or from the imbibition of any of these by the veins or cellular tissue.

4. Alterations sometimes supervening on the foregoing, or complicating the latter, such as fibrinosis, or inflammations of arteries, veins, or lymphatics, or fomentations.

5. Vitiations occasioned by the imperfect performance, or by the interruption or suppression of a depurating function.

6. Contamination produced by morbid miasms, or by specific semina, as in malignant, pestilential, and septic maladies.

7. The inoculation of poisonous secretions or fluids, as the fluids from erysipelatos inflammations, from asthenic or diffusive inflammation, from bodies recently dead from malignant diseases, or from putrid animal matters.

The treatment appropriate to each of these orders or categories of blood vitiation might be differently estimated by different observers; the author professing, however, to give only the results of his own observation and experience. His practice had been based upon a close observation, and upon rational inferences from such observation. The treatment adopted by the author in these various conditions was then detailed, illustrated here and there by some very instructive cases. The author dwelt at some length on the treatment of that morbid state of the blood which occurred in acute rheumatism, and which is characterized by the redundancy of the fibrinous and ureal constituents of the blood. What medicines would counteract the disposition to fibrinous constituents in the blood, or such as might exist? Calomel, and calomel and opium, diaphoretics, emetics, purgatives, were doubtless excellent

initiatary means to diminish excrementitious plethora; but to promote the depuratory functions, he had found the greatest advantage from magnesia and its citrate, the carbonates and citrates of the fixed alkalies, the biborates of soda and potass, the nitrate and chlorate of potass, sublimed and precipitated sulphur, &c. &c., as well as the various preparations of cinchona and turpentine. For the treatment of the sixth category, the advantages derived from large doses of turpentine were detailed; and the author concluded by expressing his hopes that he should be excused for having made so frequent reference to his own writings, where many of the matters comprised in this extensive subject were more fully discussed; but he had his own originality in some topics to vindicate, as several authors who had recently written, had considered that opinions and ideas were fair objects of plunder, if they could be conveyed away without reference to their originators, and in a different array of words.

16. *Treatment of Cholera.*—Messrs. PEARSE and MARSTON, in an interesting account (*Med. Times and Gaz.* Feb. 25, 1854) of the cases of cholera treated at the Newcastle Dispensary in 1853, make the following remarks on the treatment of that disease:—

Every one is aware of the conflicting statements made on this head; we believe that there are many cases in which the stages are so rapid, the collapse so intense and speedy, that all remedies with which we are at present acquainted, are utterly impotent. Many of the discrepancies appear to have arisen from the fact that the same remedies have been tried by different men, in different stages and periods of the epidemic; thus, at first, the cases are generally of marked malignancy, and least amenable to treatment; while towards the close, or with some sporadic cases, it is much less so, and the remedies have obtained the credit which belonged rather to a debilitated virus. During the premonitory stage of rice-water purging, without any marked tendency to collapse, we relied upon calomel and opium, in small and frequent doses; if vomiting also existed, we gave the albumen mixture (hereafter referred to). The treatment of cholera, from the pathology, would appear to comprehend—

1. The elimination or chemical alteration of the virus.

2. Antagonizing the effects of the disease.

First. By supporting the nervous system.

Secondly. Restoring, as far as practicable, the normal condition of the blood, and reconstituting glandular function.

In the reactionary stage—consecutive fever—

1. To restore the functions of the kidney and skin.

2. To treat local symptoms, particularly the cerebral affections.

During quite the first period of the epidemic, we gave brandy, and pills composed of calomel half a grain, opium and capsicum, of each, one-eighth of a grain, every half hour, with comparatively little success, except in quite the premonitory stage. By degrees, as we better understood the epidemic, we recognized the fact that the incessant vomiting prevented any remedies being assimilated, and that a large number of cases, during collapse, presented that restless condition before described; and, during the reactionary stage, had the most marked head symptoms; and we noticed, further, that in these cases opium had been given largely or very frequently, and that in these the symptoms were decidedly the worst.

If we were asked, what practical facts we had learned during the epidemic, we should reply, Three:—

1. To give as much, and only that quantity (be it ever so small), which the stomach could retain.

2. Not to give opium at all during collapse or consecutive fever.

3. Never to allow the patient to rise from his bed at all, even raise his head from the pillow, nor to allow him to take any nourishment in large quantities.

As we have before stated, the incessant vomiting was a fatal prognostic. Undoubtedly the system requires, and the patient anxiously solicits water, but they always vomited it immediately; and, remembering Dr. Hunter's admirable

common-sense views upon this head, we determined to try our patients with very small doses of liquids, to see whether any—and, if any, what—quantity was retained, and we found almost invariably that half a teaspoonful of liquid every five minutes was retained, and that by degrees it could be increased to a tablespoonful; but if any more, or anything else than the medicine recommended, were given, immediate vomiting was produced, with great prostration, and, too frequently, death. We would particularly desire that this fact should be the basis upon which we ground the success of our treatment in many cases. With regard to opium, its baneful influence was early detected by us all, and the fatality which marked those cases of a restless state of collapse was nearly allied to, if not to be attributed to, the effect of opium.

If, as we believe, death in consecutive fever is intimately connected with poisoning by urea, it can be readily understood that opium would be decidedly injurious, increasing greatly the cerebral congestion, and co-operating decidedly with the retained urea in causing death by narcotism.

We have notes of a great number of cases which were apparently doing well in every respect, but the patients anxiously desired to rise, which some of them did, from the bed entirely; others merely sat up and conversed. In all these cases, sudden death resulted apparently from syncope.

If patients were treated in an hospital, it would be well worth considering whether it would not be advisable to secure the horizontal posture by a strap over the chest, lightly affixed to the bedstead; many lives, we feel assured, might be preserved. Among, also, the many causes of failure, we must notice the injurious effect which the reception of solid food, or too large a quantity of liquid, into the stomach produced. In many cases it was instantly rejected by vomiting; in others, a return of the purging; and in all it was injurious, producing frequently tenesmus, often great pain in the head, and sometimes syncope. It is probable that the enteric mucous membrane is comparatively denuded of epithelium, and that, during recovery, it is lined by very imperfectly developed cells, while the sympathetic centres remain in a state of morbid irritation; however it may be, the contact of solid food, or any error in diet, was a most frequent cause of relapse; operating upon the system sometimes almost like a shock. The treatment that we adopted was a modification of that recommended by Professor A. Buchanan, of Glasgow, who pointedly remarks: "The natural processes by which a spontaneous recovery from cholera is effected are chiefly by the reabsorption of serum, and the absorption of fluids, &c. The study of these natural processes is of the highest importance, that our artificial treatment may be adapted to promote them, or at least may offer no impediment to their progress." We gave half a grain of calomel every twenty minutes or half hour, and one or two teaspoonfuls of the following mixture every five or ten minutes, according to the quantity capable of being retained; at the same time excluding water, if it produced vomiting:—

R. Vitelli ori ℥iij, aquæ ℥xvj, spt. vini gallici ℥ij, potass. nitratis ℥ij. M.

This mixture we invariably found was retained after a short period, and was exceedingly pleasant and grateful to the patient; at the same time, we used counter-irritation freely, in the shape of sinapisms to the epigastrium. So soon as there was evidence of the action of the liver, or the stage of collapse was passed, we gradually diminished the calomel, and persevered in the albumen mixture, the brandy being now entirely withdrawn; until the action of the kidneys was fully restored, combating the local cerebral symptoms by removal of the hair, the application of cold to the head, and counter-irritation.

We can confidently state, that as much success may be anticipated from this as from any known treatment, and we found it very far superior to any other.

As calomel is the remedy which has gained the greatest repute in this disease, and as it appears to have the power of producing some elemental change in the constituents of the blood, we conceive that in administering it we were most likely (however empirically) to meet the first indication. We considered, also, that the "albumen mixture" was far better calculated to meet all the indications than any combination we knew of, by diluting the blood with a fluid as nearly like serum as any artificial production could be. The nitrate of potass having the power of dissolving fibrin and reddening the clot of venous blood, it

might have some beneficial action; and by far the best diuretic we knew of was as speedy a dilution of the blood as practicable, with saline solutions, and restoring its albumen.

17. *Nitrate of Potash in Rheumatism.*—Dr. RICHARD ROWLAND has instituted some clinical experiments, with a view of ascertaining the comparative value of several remedies in the cure of rheumatism. The first article selected was the nitrate of potash. The questions which he desired to determine were:—

1. Has the nitrate of potash any considerable power in the cure of rheumatism? 2. Is there more danger of heart-disease occurring under its employment than in other methods of treatment? 3. In what form of rheumatism is the remedy most applicable? 4. Is there any preliminary management required to insure its favourable action? 5. What is the minimum dose necessary to obtain beneficial results? 6. Are evil consequences to be apprehended from its continued employment in considerable amount?

In a clinical lecture (*Lancet*, February 11, 1854), Dr. R. presents a summary of thirteen cases of rheumatism in which he tried this remedy, and gives the following as the conclusions at which he has arrived:—

“From a summary of these cases, it appears that the average duration of the acute symptoms, after the commencement of the treatment, was about eight days. In three cases, the rheumatism disappeared before the seventh day. In one, it was protracted to the eighteenth. But most of the patients had the complaint some days before their admission to the hospital, and sometimes it was not possible to obtain precise information as to the date of the seizure; but, so far as this could be determined, the whole average period of the acute cases appeared to be about sixteen days.

“Taking the results from the most unfavourable aspect, it must still be admitted that they support the opinion of the efficacy of the nitrate of potash in rheumatism. In some of the cases, the relief followed its exhibition almost immediately, and the improvement was rarely delayed for any considerable period. Besides the very obvious advantage of removing a complaint so painful as rheumatism as speedily as possible, it is otherwise important to lessen its duration, and especially because it diminishes the chances of those frightful complications which may attend the disease at every stage of its course.

“In no instance was there even threatening of valvular disease. The condition of the heart was carefully watched at each visit, and in all the patients it preserved its natural sounds and rhythm. This scrutiny was always repeated before each patient left the hospital, and with similar negative results. It is true that in two instances (N—— and P——) the endocardial murmur existed; but, in both these patients, the complication did not commence in the hospital. N—— had an acute attack of rheumatism, in which the nitrate was prescribed with complete success, no vestige of heart affection being present on her dismissal. But, a fortnight afterwards, she was brought to us again, having had a relapse of the complaint, and now a loud systolic murmur was immediately detected. In P——, the heart was hopelessly injured previous to his admission. These cases cannot be, therefore, set down as evidence against the utility of the nitrate of potash in rheumatism. At the same time, the number of examples is far too few to establish the probability of immunity from heart complication under this treatment. It can only be said that nothing of the kind occurred in these patients.

“With regard to the form of the disease in which the salt is most likely to prove beneficial, the testimony derived from the cases now cited decidedly shows that its efficacy is most remarkable in acute rheumatism; and it might almost be said that the beneficial result was the more striking in proportion to the activity of the attack. When subacute rheumatism supervened upon the chronic, although the nitrate was commonly efficient in removing the former, it seemed to exercise no influence over the latter. So invariably was this observed, that I have ceased to prescribe this medicine in purely chronic cases. Pains of a gouty tendency, and the capsular variety of rheumatism, appear to be equally irremediable by this means. No preliminary treatment was adopted, but the salt was almost invariably commenced at whatever period of the com-

suggested for diabetes. The principle upon which the several remedies were employed rests on the opinion that diabetes is a disorder of the digestive and assimilative functions, in which the power of conversion and appropriation of the farinaceous and amylaceous elements of food is singularly perverted and disturbed. These alimentary principles are more rapidly converted into sugar or glucose than in healthy digestion; immediate absorption by the venous capillaries of the stomach follows, the further stages of oxidation are abruptly arrested, and the glucose, quickly passing into the circulation, is, without further metamorphosis, excreted by the kidneys. I postpone, also, to another opportunity, any reference to the interesting question, whether all the sugar passed by diabetic patients is solely derived from vegetable food, or whether the tissues of the organism, as well as the nitrogenous elements of animal food, may not also contribute to the formation of the large amount of saccharine matter excreted in glucosuria. The regimen in the following cases consisted in diminishing, as far as possible, the supply of vegetable material containing fecula or starch, the mass of nutriment being derived from the nitrogenous class of aliments. The medicinal remedies may be classed as follows, the more novel ones being placed first:—

1. The permanganate of potass, hypothetically to supply the stomach with an increased amount of oxygen, by which the metamorphosis of the farinaceous material should be hastened forward into a higher state of oxidation than that of sugar, permanganate of potass, as is well known, out of the body, converting sugar into oxalic acid. Mr. Sampson, who first employed it, states (*Lancet*, Jan. 8, 1853) that his attention was drawn to this salt when seeking for some remedy which should give out oxygen when taken into the stomach, with the view of assisting the imperfect action of the digestive and assimilative functions. He records a case in which it appeared beneficial. We must not overlook the fact, however, that a prominent error in the digestive process of the diabetic patient is the premature and rapid conversion of the fecula of food into sugar; it is hasty and imperfect—not tedious or protracted.

2. Agents that, hypothetically, should retard and delay the formation of glucose in the stomach. Certain substances possess the property of arresting the saccharine, vinous, and acetous fermentations. If glycerin be added to a half-fermented infusion of malt, the further formation of acid is checked; and I have found that a mixture of potato-starch and dilute nitric acid undergoes chemical conversion into dextrine and glucose more slowly, and is all but arrested, if glycerin be previously mixed with the starch. Glycerin, creasote, and sulphite of soda have been tried on this principle.

3. Opium and opiates, to act on the nervous system; to diminish the excitement and irritability of the nervous centres.

4. Remedies which relieve thirst, and aid the digestive process by the supply of hydrochloric acid, and which tend indirectly to diminish the amount of fluid excreted by the kidneys, as recommended by Dr. Owen Rees. (*Medical Gazette*, vol. xl. p. 365.) Hydrochloric and some vegetable acids.

5. Diaphoretics, stimulating the palpably defective cutaneous secretion, and thus vicariously lessening the proportion of fluid to be excreted by the kidneys. Antimonials; warm baths; flannel clothing.

6. The use of alkalies, particularly ammonia; on the hypothesis of Mialhe, that the starch of food is equally converted into sugar by healthy and diabetic persons; but that in health it is metamorphosed and burnt off by the presence of alkalies, undergoing complete oxidation, and is ultimately discharged as carbonic acid from the lungs; but that in diabetes it is not oxidized, owing to the deficiency of alkalies in the blood, the sugar, without further change, passing off by the kidneys.

These several remedies have never been administered in conjunction; and if, in the same case, two or more have been tried, a day or two has been allowed to elapse, that the observations recorded might be fairly deduced from the remedy employed.

The results were as follows:—

- 1st. The permanganate of potass was given in two cases; during its administration, the amount of sugar excreted gradually increased, although the fluid

amount of urine became somewhat less, and the thirst appeared to be alleviated. No inconvenience attended its use; ten-grain doses were taken without any unpleasant effects on the digestive organs; indeed, it was thought that some benefit arose from it, as the fulness and eructations, in one case, seemed relieved by it; but, during its administration, the ratio of the sugar steadily increased. This occurred equally in both cases; the symptoms of each differed but little in intensity. There was but a slight discrepancy in their several ages, and in both the disease was unaccompanied by any pulmonary complication, so that there was scarcely room for a doubt that the increased amount of oxygen supplied to the food by the permanganate of potass facilitated the formation of sugar, and did not, as hypothetically inferred, advance the chemical conversion of the glucose into the stage of acid metamorphosis. Dr. Wood, of Philadelphia, has tried yeast in diabetes, on the principle here enunciated, that, as it converts sugar out of the body into acid products, acetic and carbonic acids, it might bring about analogous changes in the stomach. On a like principle, Dr. Gray, of Glasgow, has tried rennet, which converts sugar into lactic acid.

2dly. From the operation of the agents of the second class, administered on the hypothesis of their possibly retarding the conversion of the amylaceous elements of food into sugar, we can deduce only negative results. They were tried only in one case, and, during a period of twenty-one days, the amount of sugar was only faintly diminished, the specific gravity falling from 10.44 to 10.40, the average daily amount of urine remaining the same. The case in which these remedies were tried was one of great severity, and ultimately proved fatal; yet, notwithstanding, other remedies succeeded in reducing the amount of sugar, though only temporarily. Although glycerin and sulphite of soda failed in producing any effects in this case, I am nevertheless desirous of again submitting these remedies to further trial, and testing, by the evidence of more extended observation, the fallacy or otherwise of their hypothetical agency.

3dly. *Opium and Opiates*.—These cases afford but a limited amount of evidence on the action of these agents. Opium certainly operated as a palliative; the thirst became much relieved, the amount of urine diminished, and the skin, by the presence of sudoresis, indicated a relief to its obstructed function; but the daily average amount of sugar excreted was not materially lessened, and the physical condition of the patient was not improved. Some constitutions will bear opium much better than others, and it must not be inferred, because these cases do not exhibit its agency in a more favourable light, that opium may not in other instances produce more remedial effects.

4thly, *Hydrochloric Acid*.—The action of this mineral acid appears in a favourable light in one case. It promoted the digestive function, relieved the flatulence, and probably furnished an important material to the solvent functions of the stomach. In other forms of dyspeptic derangement, its agency is familiar. It should always be taken some few minutes before food.

5thly. *Diaphoretics*.—These may be administered in conjunction with opium. The suppressed function of the skin is so very evident in all cases of diabetes—becoming harsh, wrinkled, and fursuraceous, patients seldom perspiring, and relief being always apparent so soon as any moisture is obtained on the surface—that remedies which excite or assist in promoting cutaneous excretion are always more or less indicated. Opium itself tends to promote diaphoresis, even when given alone, and its action in this respect may be much increased by combining it with antimonials. Flannel clothing should be strictly enjoined. Several of these cases illustrate the advantage of warm baths in conjunction with these agents.

6thly. *Ammonia and Alkalies*.—The testimony of almost all writers on this disease is in favour of the remedial power of alkalies, particularly of the carbonate of ammonia; and the cases just detailed corroborate the opinions of the most experienced physicians on their efficacy. The fifth case presents the most satisfactory proofs of this plan of treatment, as the patient left the hospital temporarily cured. Of the mode of action of alkalies in this disease, little is known beyond what is hypothetical. Mialhe states that the blood in diabetes is deficient in alkaline salts; and he affirms that the ultimate conversion of the

sugar formed out of the food, into products capable of being eliminated by the respiratory function, is not effected in consequence of the deficiency. To supply this defect should be the leading principle in the treatment of glucosuria. Whether we adopt this theory or not, the fact remains indisputable, that a larger amount of relief is obtained by a steady and persevering use of ammonia and alkaline salts, than can be procured by any other class of remedies. However, to render them efficient, a well-regulated diet must be rigidly followed, and this should be limited as much as possible to animal or nitrogenous food. In the opinion of Bouchardet, clothing ranks next to diet. Moreover, the intelligent co-operation of the patient is absolutely necessary; for, unless he can be made to understand and enter into the object for which so strict a diet is prescribed, the effects of the alkaline plan of treatment will prove uncertain and unsatisfactory. The progress of cases in private practice is, for the most part, always more satisfactory than among hospital patients, principally for this reason—that intelligence lends force to the efforts of self-denial, and develops a more powerful control over the appetites and habits. The less educated are but little inclined to abstain even from things which they know to be positively injurious, and they with difficulty can be brought to comprehend the necessity for refraining from bread and vegetables, which their necessities have always taught them to be the staple articles of their food.

I cannot take leave of this subject of diabetes, without referring to Dr. Hassall's very valuable paper, in the *Medico-Chirurgical Transactions*, on the "Development of Torulæ in the Urine." When sugar is present in urine in smaller quantities than can be detected by the action of chemical reagents, he has shown that the sporules of the sugar fungus, or even a higher stage of development, may be readily detected by the microscope.

20. *Treatment of Diabetes.*—Dr. H. BENCE JONES, in a clinical lecture (*Med. Times and Gaz.* Feb. 4, 1854) makes the following remarks on this subject: "M. Bouchardat has long recommended claret in this disease, and to the amount of two bottles even in the day. Dr. Prout used to permit his patients to take porter. Being desirous of determining which of these directions was to be preferred, I made some experiments regarding the amount of saccharine matter and acid in wine and beer. I have come to the conclusion, that claret is usually perfectly free from all saccharine matter. The same may be said of Burgundy, Rhine wine, and Moselle wine. Very rarely, indeed, a sherry may be met with which contains no sugar, but generally sherry, port, Madeira, Marsala, contain amounts of sugar varying from 2 grains to 34 grains to the ounce. The best porter gave me from 23 grains to 40 grains of saccharine matter to the ounce; the best stout, from 45 grains to 64 grains; the best bitter ale, from 14 grains to 130 grains to the ounce. Hence it appears that claret will not increase the sugar in the urine, while porter will do so considerably. Direct experiments with diabetic urine has also proved the same fact.

"Spirits, as brandy, whiskey, rum, usually contain no traces of sugar, and hence they may be prescribed for diabetic patients.

"M. Bouchardat, who has seen more of this disease than any one, says that milk is not allowable. The most careful experiments lead me to the opinion that milk scarcely increases the sugar in the urine, even when it is the sole article of diet."

It is most probable that milk-sugar is not easily converted into glucose in the human body. I have, therefore, constantly permitted it to be taken by diabetic patients. It is apt to give rise to constipation, and this has been best obviated by taking an equal quantity of fluid magnesia with the milk in the morning.

One of the terminations of diabetes is by phthisis, and on this account, as well for the emaciation, Dr. Jones was led to prescribe cod-liver oil. To a young woman in St. George's Hospital he gave an ounce daily for three months. In this time she gained eleven pounds in weight. Her thirst so diminished that she passed only two and a half pints of urine in twenty-four hours, instead of twelve pints.

"A man, 40 years old, came into the hospital, passing seven pints of urine in



twenty-four hours. He was put on cod-liver oil, one and a half ounce in the day, with a drachm of liquor potassæ. In the first fortnight he lost four pounds and a half. He then took three ounces of oil in the day, with two drachms of liquor potassæ, and in a fortnight he had gained eight pounds. The quantity of urine was reduced to three pints. At the end of five weeks from his admission, he went out at his own request, saying that he was stronger than he had been for eight months, and that he was quite well. The urine still contained a small quantity of sugar."

An enormous amount of cod-liver oil may be taken in diabetes; thus, one of Dr. Jones's patients took, in five weeks, eight pints, fourteen and a half ounces.

On first entering hospital, this patient lost eight pounds in weight; while taking the oil in large quantities, he regained this and one pound more. The urine, with the diet, decreased from five pints, specific gravity 1040, to two and a half pints, specific gravity 1032. The sugar never disappeared from the urine.

Dr. Jones has tried various specifics that have been from time to time proposed. Permanganate of potassa, rennet, so called pepsin, arsenic, electricity, Vichy water, creasote, opium, bark, iron, mineral acids, alkalies, and many others. Hitherto, the search for a specific has only proved that none is yet known to exist.

"Still," he says, "when we look at the morbid anatomy, when minute microscopical examination can give no clue to the seat of the disease, when it pronounces that the stomach and viscera are healthy, when it indicates that a functional error has ended life, we are led to hope that further investigation (some remarkable experiments have lately been published by Dr. Harley on the artificial production of diabetes in animals by the action of stimulants injected into the vena portæ) may lead to the perfect theory of the disease, and by this to the radical cure, instead of the palliative treatment, of this most interesting disorder."

21. *Dropsy in Relation to Treatment.*—Dr. BARCLAY read a paper on this subject before the Western Medical and Surgical Society, January 20, 1854. He commenced by alluding to the high mortality of this disease, and stated that the only disease which at all approached it in this respect was phthisis. He drew his conclusions, and carefully illustrated his views, from the Medical Registries in St. George's Hospital during the years 1851-52. He then restricted the term dropsy to anasarca and ascites, considering that as hydrothorax, hydrocephalus, &c., when not presenting themselves as mere isolated portions of general dropsy, are practically found only as the result of inflammation, they should be classed accordingly. Although the distinction between anasarca and ascites is generally clear, yet in many cases both forms are present, but a little care will generally discern the primary form. The morbid states giving rise to ascites are much more fatal than those associated with anasarca, more than two-thirds of those admitted with the latter form being discharged from the hospital cured or relieved, while less than one-third of those affected with ascites reap the like benefits; but here we should bear in mind that many anasarcaous patients return again and again to the hospital to be relieved of the same set of symptoms. Though the actual frequency of, and, consequently, the actual number of deaths from, anasarca is far greater than from ascites, yet the ratio of mortality in the latter form is exactly double that in the former. With regard to anasarca, though by far the greater number of cases are associated with disease of either kidney or heart, yet certain cases will compel us to attribute the disease to some other cause. During the two years alluded to, nearly one-fourth of these cases could not be accounted for. The most frequent association of this disease is disease of the kidney, with or without disease of the heart; next comes disease of the heart itself. But though these lesions are apparently so evident a cause for serous effusion,

<sup>1</sup> My friend, Dr. Handfield Jones, has lately examined minutely for me the stomach of a patient of mine who died of diabetes, in St. George's Hospital. It appeared to be healthy.

yet, upon further analysis of these cases, there will be found by no means such a direct connection between the disease and symptom, except where both organs were implicated. This assertion is borne out by the fact that, in the two years before mentioned, but few cases of diseased kidney, and still fewer of diseased heart, presented no other malady of sufficient importance to find a place in the register of disease; and to every one conversant with disease, the pale face of albuminuria, and the dusky hue of impeded circulation, point out something beyond the mere change of structure—some change in the blood itself—to be one of the necessary associations of dropsy. We found also that 63 per cent. of the patients labouring under disease of the kidney, and 42 per cent. of those with disease of the heart, have at the same time been affected with anasarca, and that, in some cases, the only other complication found was bronchitis with emphysema. All which facts go to prove that disease of the heart and kidney may go on for years without causing any dropsy, until the mucous membrane of the lungs becomes congested, and that serous accumulation follows. The explanation then is found in the obstruction that takes place in the circulation through the lungs, and secondarily in the effects of a chronic bronchitis on the constitution. Next to bronchitis, phthisis stands as a cause for dropsy, its degree probably being regulated by the amount of night-sweats, which draw off, to a certain extent, the serous accumulations. In other cases, anæmia goes to prove that some state of the blood is an essential element in the occurrence of dropsy.

In regard to cardiac disease, valvular lesion is the most common cause of dropsy, and hypertrophy the least so, which shows that the production of dropsy depends upon some failure of the *vis à tergo*—a view borne out by a careful analysis of the various cases. In mitral disease, the danger does not depend upon the loudness of the murmur, but upon the feebleness of the pulse, and in aortic disease dropsy seldom occurs until regurgitation is established. An increased circulation alone, too, is barely a cause of dropsy, unless some obstruction exists to the circulation of the blood, or there be an abnormal tendency to transudation of serum. Bronchitis, whether due to congestion of the lungs, from mitral regurgitation, or from exposure to cold, is one of the diseases which act in this manner. A similar (but a more fatal) result is seen in obstruction to the circulation through the liver, and in all these cases the other causes, which of themselves originate dropsy, may come into play. With regard to valvular disease, we must bear in mind its detection at an early period, while alteration of the size of the heart only becomes manifest after it has acquired a certain degree of intensity, which fact, though it may have much effect upon the numerical relations of the lesions, still is of little importance, as the dropsy never occurs in an early stage of either form of disease. It is then remarked—

1. That a systolic murmur may coexist with dropsy, and yet have nothing to do with its production, the cause being simply an anæmic condition of body.

2. That hypertrophy of the heart may be masked by emphysematous lungs, leading one to the supposition that either atrophy or dilatation of that organ existed.

3. That a mitral murmur may be covered by a turbulent action of the heart.

4. That cases occur in which regurgitation through the mitral valves depends upon hypertrophy, a condition leading to no error, as the results are the same whatever the cause of the regurgitation.

The relation of kidney disease to dropsy was then discussed, in which he stated that each stage of the disease was marked by a peculiar state of the urine. In the early stage, the urine is generally clear and free from albumen, though this condition of the secretion sometimes is found in advanced stages of the same disease, which must make us careful in our examinations of the urine, and in forming our suspicions as to the degree of renal change. In the congestive stage, albumen is present, and in acute cases of dropsy, as after scarlatina, it is found in small quantities only in connection with an abundant supply of lithates. In the hemorrhagic stage, the albumen is most abundant, but will be found to bear no relation to the blood passed. Diseased kidney acts in the production of dropsy in two ways—by suppression of urine, and by causing a drain of

albumen and salts from the body, in consequence of which the blood becomes impoverished, and, when disease of the heart is present, it is not difficult to see this morbid state act with increased energy in company with albuminuria. In ascites there is more obscurity, and though the dropsy may arise from obstructed circulation through the liver, it may also happen if the mutual balance between absorption and secretion of the peritoneal surface be destroyed. But the dropsy may be due to some general disease of the system, and be associated with anasarca, in which case some distinct cause will be found for the latter. A diseased state of the peritoneum, including inflammation and malignant conditions of that membrane, may also cause ascites, and, as either may be associated with renal or cardiac disease, it is clear that all such cases are connected with and dependent on some obstruction to the onward current of the blood. As dropsy seldom depends upon the morbid state of any organ alone, but generally in connection with some functional disturbance of it for the time being, these superadded causes are amenable to treatment, though the original one may not be. In simple, uncomplicated anasarca (as after scarlatina) we have simply to counteract the suppression of urine, but in other cases we must improve the tonicity of the blood and system generally. When the kidneys are congested, and effusion is an immediate result, we should use the intestines and the skin, as our channels for the discharge of the serum, rather than the kidneys. In complicated cases, we often have irritation to soothe, and inflammation to subdue, before the dropsy be attacked. In chronic bronchitis, in connection with these cases, we must attend to the general health, rather than use expectorants. The heart must be supported, and the blood improved by iron, and the kidneys excited by digitalis and buchu, rather than by more powerful diuretics. The most good in ascites.

The discussion which followed embraced the subject of acupuncture in cases of dropsy, which was strongly recommended by some members present.—*Lancet*, Jan. 28, 1854.

**22. Hypertrophy of the Spleen.**—Prof. CHRISTIANSEN, of Copenhagen considers splenic enlargement to be caused by such mechanical obstacles as impede the return of the venous blood to the heart, and by such dyscrasic states of the blood as give a tendency to hyperæmia. He has frequently met with it in cases where there was hypertrophy of the right ventricle of the heart. In these circumstances, he says, so called "infarctions," or capillary apoplexies, are not uncommon, presenting, in its substance, clots which, at first, are firm with well-defined borders, and afterwards become decolorized and softened. Hypertrophy of the spleen also occurs in cases where there exists any impediment to the circulation through the vena cava; where there is constriction or impermeability of the vena portæ; and where there has been suppression of the menstrual or hemorrhoidal evacuations. In the blood-diseases, as typhus, cholera, pyæmia, and delirium tremens, he says, the organ is frequently, not only enlarged, but also altered in structure. He has never seen enlargement from intermittent fever, as this disease is extremely rare in Copenhagen, but he believes it to be due to the repeated hyperæmic condition of the organ. He has frequently observed splenic hypertrophy occurring in cases of Bright's disease, so that the organ weighed from 3xvi to 3xx. Its condition, in these cases, resembles that observed in it by Rokitansky after intermittent; i. e. it is so hard and brittle that it can easily be cut into thin slices or broken into fragments. It presents, on section, a coarse granular structure, nodules the size of pepper-corns being imbedded in its substance; it is also of a bluish-red or dark violet colour, which becomes bright red on exposure to the air. Its form is somewhat changed, the inner border being broader and firmer than ordinary. The fibrous capsule is not firmer than usual, and there are no morbid adhesions to the peritoneum, although these conditions frequently are found in the enlargement following intermittent. The author thinks this condition of the spleen arises from a deposition of albumen in the substance of the organ, and surmises that, after the absorption of the watery elements, the

albumen remains behind in the Malpighian bodies, in a solid form, occasioning, by their dilatation, the granular structure alluded to.

Prof. Christiansen has found many pathological lesions of the thoracic and abdominal viscera existing in connection with enlarged spleen. Thus, he has found the inferior and posterior parts of the lungs infiltrated with dark-coloured blood; imbibition of the heart, especially of the inner wall of the right ventricle, and accumulations within it of grumous blood; distensions of the veins surrounding the Malpighian pyramids of the kidneys; sanguineous effusions into the peritoneal cavity, and into the external cellular tissues. In all cases, he found blood extravasated into the intestinal canal, resulting from a diphtheritic inflammation of the mucous membrane, which had caused, during life, bloody evacuations with tormina and tenesmus. As regards *treatment*, he admits that very little is known. He has seen one case do well under the use of *plumbi acetat.* Where the patient's strength will bear them, strong counter-irritants, as moxa, caustic, and the actual cautery, may be tried. In the hypertrophy following intermittent, quinia seems to him the best remedy for the restoration of the general health.—*Monthly Journ. Med. Sci.* Jan. 1854, from *Schmidt's Jahrbücher*, Bd. 79.

23. *Sulphate of Manganese in Hypertrophy of the Spleen.*—Prof. GINTAC recommends this salt as a substitute for, and adjuvant of chalybeate remedies, for improving the condition of the blood in anæmic patients. He relates an instance of ascites, where œdema, with great splenic enlargement, formed the sequelæ of intermittent fever, in which  $1\frac{1}{2}$  grains (0.10 gramme) of this drug, given twice daily in the form of pill, produced a complete cure.—*L'Union Médicale*, lxxix. 1853.

24. *Observations on a Case of Fecal Obstruction.* By R. CHRISTISON, M.D., Prof. of Mat. Med. and Clin. Med. in Univ. of Edinburgh.—Some persons have such a horror of aperient medicines, that they cannot persuade themselves to take one oftener than twice a week, or once a week only. And, nevertheless, you will sometimes see them keep their health, and maintain their bodily comfort. But, for the most part, you will find it a sound general rule, to insist with such people on a more liberal use of aperients; and the great variety we now possess of convenient compound aperients, will enable you to find some one suitable to the constitution of any body, and reconcilable with almost any prejudices.

There are others whose prejudices are unconquerable, and who will not take laxatives at all, though their bowels do not move of themselves above once a week, if even so often. And it is right you should be aware that this apparently most unnatural and preposterous habit is not of necessity, and in all cases, a habit injurious to health. You will occasionally meet with men so singularly constituted, that they enjoy sound health upon a weekly stool. And, indeed, all perhaps that can be well said of them is, that they are rather to be envied by their fellow-creatures, for an endowment which must be frequently found very convenient. But such people sometimes get into difficulties. About two years ago, a gentleman from Wigtonshire, a landed proprietor, attached to agricultural pursuits, and, therefore, never without free air and exercise, consulted me about a serious difference he had with his medical advisers in the country. Having recently recovered under their care from a severe pneumonia, they made the not unreasonable stipulation, when they ceased to attend him, that he should take a laxative every three days, to correct a constipated habit. To this he demurred, on the very natural ground that, until his late illness, he had enjoyed excellent health for sixty years, although his bowels had been habitually moved, all his life, only once a fortnight. This gentleman had made a journey of one hundred and twenty miles for no other reason than to get the question between him and his physicians settled by some competent authority in therapeutics; and, in referring to me for the purpose, he mentioned, for my further guidance, that a neighbouring gentleman of his acquaintance, of the age of seventy, had told him that he too had immemorably evacuated his bowels only every alternate Sunday, without being able to rec-

posed by the clinical clerk to resort to galvanism for relief from this paralytic condition; which suggestion was at once adopted. It is more than twenty-five years since galvanism was recommended as a useful remedy in cases of obstinate constipation; and we can easily see that it may be useful, and upon what principle it acts. The first way of using it was by directing the galvanic current from the mouth to the anus; and in that way it seems to have been most effectual and prompt in some cases. But its action is thus rather painful; and ulterior observation has shown that passing the current in various directions through the abdomen itself may be sufficient. This remedy seemed even more applicable to the state of our patient after the bowels had been cleared out. And accordingly it acted with wonderful energy and success. After the current had been passed for some time from before backwards, as well as from side to side, he had in an hour a copious evacuation, in three hours another, and next morning a third. Flatus was also discharged in abundance; and the abdomen fell greatly, but still not completely, above all in the iliac regions. The pain of the galvanic action, however, had been so great, that the patient begged to have a day's respite. In fact, he declared his willingness, and confirmed it with an oath, that he would rather be shot again than submit to be galvanized a second time. On the second morning, however, the remedy was applied more gently, and on two mornings subsequently. He had a daily discharge from his bowels, and sometimes two. The abdomen had now become natural in size and form. Since then he has had a natural evacuation every morning without aid from either laxative or galvanism. He was dismissed after being fourteen days in hospital.

This is a case a little out of the common run, but not without instruction; and I have, therefore, thought it well to bring the chief circumstances under your notice. It is an excellent illustration of the influence exerted by galvanism over the animal functions. It appears to me to hold out a probability that the same remedy may prove serviceable in restoring the tone of the intestinal muscles, in other forms of inconvenient chronic flatulent distension of the abdomen.—*Month. Journ. Med. Sci.* Sept. 1853.

25. *Pemphigus*.—The *Med. Times and Gaz.* (Feb. 11, 1854) contains a report of eighteen cases of this rather rare disease; and from a consideration of which the reporter draws the following conclusions:—

1. That pemphigus is a disease affecting all periods of life; especially liable to occur between the ages of four and twenty-five.

2. That, like many other skin diseases, it very frequently recurs in those who have once been its subjects.

3. That it usually affects those only of a fair complexion and thin skin. (To this we find no exception among the cases in which note has been made as to the complexion.)

4. That it is rather more common in the male than the female sex (10 to 8).

5. That its severe chronic and relapsing forms are more frequent than the benign and transient.

6. That the parts most liable to be affected are the legs, arms, genitals, abdomen; seldom the face, and very rarely the hairy scalp.

7. That the serum of the bullæ is almost always alkaline. (It was tested in most of the cases, and no exception occurred; the alkalinity was generally very great.)

8. That it is very rarely a symptom of congenital, and perhaps never of acquired syphilis.

9. That it occurs commonly to those of good physical conformation, but is mostly coincident with temporary cachexia.

10. That it is not very markedly influenced by season.

11. That its idiopathic infantile form is a very mild disease, and will usually recover spontaneously.

12. That it is not, as a rule, associated with any particular form of cachexia. (In but two of the above cases were the patients scrofulous; none were known to be rheumatic, or to have had ague; dyspepsia was an attendant in but few.)

13. That the general indications are for the use of tonic regimen and generous diet (Cases 13 and 14); but that these will not suffice for the cure (Cases 3, 4, and 14).

14. That arsenic may be esteemed an almost specific remedy, even in the worst class of cases (Cases 2, 3, 4, 14, &c. &c.). [The careful perusal of the preceding series will, we think, convince the reader that this proposition is not too strongly put. Many of the patients were, when admitted under Mr. Starlin's care, in a truly deplorable condition; the disease had produced extreme irritation, it had lasted for many months or years, it had resisted all sorts of treatment previously. In every instance but two (Cases 3 and 15) the most marked benefit attended the adoption of the arsenical plan.]

15. That arsenic does not merely repress the eruption, but remedies the unknown constitutional cause on which that symptom depends, always very much benefiting the general health of the patient.

16. That arsenic does not prevent the liability to subsequent attacks, but that such attacks are always much less severe than the original one, and tend, if treated by the same remedy, to diminish in intensity on each successive occasion.

17. That the early age of the patient does not in the least forbid resort to the arsenical treatment.

Those acquainted with the literature of this subject will observe, that the above conclusions differ considerably in some respects from the statements to be found in books. The disease itself may probably differ somewhat in London and on the Continent. Gillibert, whose monograph on it is the best extant, appears, for instance, to have met with but three examples of chronic pemphigus, all of them in elderly and enfeebled subjects. A current opinion has accordingly prevailed, that that form is almost peculiar to the aged, while the fact is, as we have above shown, that in London, at any rate, the young are much more frequently its subjects. Cases of relapsing pemphigus, or those in which the disease has extended over many years, do not appear to have attracted much notice from previous writers. Pemphigus is not known to prevail endemically in any part of England; on the contrary, it seems to be about equally scattered over all districts. Two cases came under our notice in York some years ago, and during the last summer we saw a very well-marked case in the Leeds Infirmary, under the care of Mr. Samuel Hey. Mr. Hey informed us that the disease was very rare in Leeds, and that he had, during many years, seen but that one example. There does not appear to be much foundation for the opinion that the disease prevails most in damp localities, and on the banks of rivers. Such a notion is supported by but a small proportion of the above cases. The preceding series probably scarcely presents the benign and chronic forms in their due proportions as to frequency of occurrence, since cases of the former are often of so transient a character that they never come under care at hospitals. With regard to the treatment of the chronic form by arsenic, we have recorded *all* that we have seen. A case has been mentioned to us, however, by a gentleman of very careful observation, in which the arsenic is stated to have quite failed to cure the disease, while it seriously interfered with the patient's (a child) health. We have not obtained particulars as to administration, &c.

The disease known in London as *rupia escharotica*, but described by Dr. Corrigan as a form of infantile pemphigus, has been altogether omitted in the above, and is reserved for a future report. Whatever may be said of its primary stage, its aftercourse has no sort of resemblance to pemphigus.

26. *Ringworm cured by the local application of Sulphurous Acid.*—Dr. JENNER, in a clinical lecture (*Med. Times and Gaz.* Aug. 20, 1853), relates a case of ringworm which he successfully treated by a lotion of sulphurous acid. The lotion is made by passing a stream of sulphurous acid through water until the latter is saturated; and to two ounces of this solution is added six ounces of water. Lint wetted with this is applied to the ringworm, and this is covered with a piece of oil-silk.

27. *The Indian Plague and the Black Death.*—Dr. AUGUST HIRSCH, of Dantzic, communicated a very interesting paper on this subject to the Epidemiological Society (Dec. 5, 1853). The author commenced by stating that, in the whole history of epidemics, there are few epochs more interesting than that of the fourth decennium of our century; for then, within the compass of a few years, we find many of the most important diseases spread epidemically over the globe. These were preceded by agues, which prevailed at the close of the third decennium, and by the influenzas of the years 1831-3. Cholera, which in 1823, had stopped short on reaching the frontier of Europe, overspread with the force of a torrent the Russian empire, and in 1831 entered Germany, where, in the southern parts of the kingdom, it was soon followed by typhoid fever and dysentery. At the same period "sweat fever" appeared in France and Italy, and, for the first time, "typhus cereбрalis" was propagated epidemically. In North America cholera, typhus, and yellow fever raged. Turkey, Western Asia, Egypt, and the greater part of North Africa, were ravaged by typhoid fever and Oriental plague; and it was just at that period that a disease of a new and most malignant character broke out in the northwest part of Hindostan. Research among the archives of the Medical Board, however, made it evident that that same disease prevailed some years before in those regions: but the attention given to it had subsided soon after the epidemic ceased. The author considers the disease in question to have been a very decided plague, specifically modified; and that, in order to distinguish it from the Oriental plague, it may justly be denominated the "Indian Plague." The first historical report of the outbreak of the Indian plague dates from the year 1815, in the provinces of Kutch and Guzerat, which in the previous year had suffered from terrible famine. Neither the origin nor the course of the epidemic could be distinctly traced, but there is no doubt that the disease already, in May, 1815, had spread over some parts of Kutch, and the district of Wagoor, that it raged in these territories until the following year, and made great havoc among the inhabitants. At the same time the epidemic appeared in Kattywar, whence it spread to Scinde, and in November it reached Hyderabad, where from sixty to seventy persons daily fell victims to the plague. The epidemic entered the northeastern district of Guzerat, in the beginning of 1817, and abated in the fall of the year. With the rainy season of 1819 it burst forth with new vigour, and overspreading the territory which had suffered during the previous year, reached the northern part of Guzerat, and in the east the Zillah of Ahmedabad. With the close of 1821 the epidemic everywhere disappeared; and, but for the remark of Dr. Rankine, that the plague had been observed, in 1823, in the mountainous territory of Kamoon, we have no information of its reappearance until 1836, when it broke out with great malignity in a country far removed from that above mentioned. It was then that the disease for the first time attracted general attention, and gave rise to scientific inquiries, and the adoption of sanitary measures. The Radjpootana States were the scene of the ravages of this epidemic; and as the first report of the disease came from Pali, in the province of Marwar, it has obtained the name of the Pali plague, although it is anything but certain that the epidemic originated in that place, for it also raged at the same time (July, 1836) in other districts of that province. After having traversed the greater part of Marwar, the disease passed the chain of hills separating the eastern borders of this province from Meikwar, overspread that country, and afterwards the district of Adjmer. Early in 1837, when the epidemic in Marwar had nearly ceased, it appeared in Misserabad, and declined with the rainy season. At the close of 1837, it again invaded Marwar, especially the town of Pali, and continued till the spring of the following year. Since that time, up to 1850, there was no further report of the prevalence of the malady. It was in this year that a fresh outburst occurred at Ghuravhal and Kamorn, in the Himalayan territory. Dr. Hirsch gives a very minute and graphic description of the mode of invasion, and of the general symptoms of the disease. The disease, although a bubonic plague, was distinguishable from the Oriental plague by an attendant pulmonary affection, with hæmoptoe. The mortality was dreadful; the supposition that it was from 75 to 80 per cent.

of those attacked being by no means exaggerated. In the town of Pali alone, in a population of 20,000 inhabitants, 4,000 persons fell a sacrifice to the plague in the period of seven months. The disease did not appear to be contagious, nor was it at all influenced by season. In the concluding portion of the paper, which indicated much learning, labour, and deep research into the writings of ancient as well as modern authorities, the author adduced strong evidence as to the identity of the Indian plague with the black death of the fourteenth century—that terrible epidemic which fills one of the darkest pages in the history of mankind.—*Med. Times and Gaz.* Dec. 10, 1853.

23. *On the Sanitary Influence of Purulent Discharges.*—MR. ROGER HARRISON read a paper on this subject before the Medical Society of London (Jan. 14, 1854). He began by apologizing for the rather vague title of his paper, vague inasmuch as his remarks would necessarily (on account of time) permit him only more especially to allude to one of the forms of the salutary influence of purulent discharge, viz: the fistula in ano, which frequently accompanies diseased visceral organs; and, by cases recited, he showed how spontaneous fistula in ano pointed to some more specific manifestations of the laws regulating the production of pus in parts remote from the seat of the disease; as well as that he believed the fistula occasionally preceded the development of pulmonary consumption. In the course of his observations he drew attention to the fact, that, in spite of the recommendations of Sir B. Brodie, to ascertain the state of the person's lungs, &c. before operating in this class of disease, the reverse still obtains, and the operation was yet persisted in at the premature cost of the patient's life. He believed that, in many cases, while the purulent discharge was constantly taking place from the rectum, the true disease was masked, and that, so long as a drain was kept up spontaneously, vital organs were relieved, and life sustained; but that, immediately on the cessation of these habituated discharges, the seeds of phthisical disease, which were but lumbering in inactivity, were forced into existence, and the patient sank under their destructive influence. He used the word spontaneous strictly, inasmuch as he attributed not the same amount of prophylaxis to artificial issues, or setons, &c., although he was aware the latter occasionally were of temporary benefit. The author, in the course of his paper, combated the view taken by Andral and Louis, that fistula in ano and phthisis were not concurrent in more than one of the former, in 800 cases of the latter disease, and did not attach much accuracy to the statements of the French physiologists; and he quoted passages from Pott and Brodie, as well as his own experience, to show that the practice of English surgeons led them to lay down strict rules of treatment in cases of fistula in ano, complicated with pulmonary diseases. He further expressed his belief in the truth of his position by contemplating the physiology of suppuration, as exhibited in the exanthemata of children—(all of which he believed to be blood diseases)—in the glandular abscesses of boyhood. The almost immunity of it at puberty—the recurrence of it again in attained manhood, when nature, ever fruitful and bountiful, makes a contingent charge upon less important parts, to carry off effete matter which may have accumulated in the blood. He then proceeded to deduce from the cases read, points as to the physiology of diseased action in the human body, which he considered entirely dependent on individual constitution. It appeared plain to him, that the human frame was obnoxious to two distinct actions going on in the body at one and the same time, and that the disease of which the constitution is most susceptible was not at all times the one in the ascendant, but was often, by an adventitious discharge (such as fistula) kept in the dark, and diseased vitality of the blood thrown off to the relief of internal organs. This position, he maintained, was evidenced by the experiments of Cruveilhier and Blandin, and the writings of Carawell and Pott, of Wilson, and of Cooper. He alluded, in the course of his remarks, to the prevalence of boils and carbuncles as confirmatory of a diseased action in one functional organ set up to relieve the blood of its *materies morbi*, engendered by atmospheric or other influences. He touched upon the histology of pus and its formation, disagreeing with Dr. Lebert, of



Vaud, who could discover no similarity between concrete pus and tubercle, he believing the difference in size of the two fully accounting for the small difference in shape. He quite coincided with Dupuytren as to the formation of pus being the result of the wrecks of solids, of inflamed organs, and of the elements of the blood, which have entered into new combinations; and concluded his paper by drawing the attention of the Society to the plain plan of practice alone necessary in the treatment of those complicated diseases of tuberculosis and fistula, and decrying all surgical interference in such cases.

Dr. Ogier Ward, in support of the author's opinions, mentioned the particulars of the case of a young lady who had been afflicted with ulceration of the cervical gland, general debility, and threatenings of phthisis. She was directed to visit Hastings; and, so long as she did so, and the glands continued to suppurate, phthisis did not appear; but, having at length much improved in health, and induced a tendency to the healing of the suppurating glands, the patient declined to undertake her annual journey, and died during the next spring. Dr. Ward, as an old pupil of M. Louis, was desirous to reconcile the contrary statements made by that distinguished physician; and the author being assured that all the statements were made in good faith, and thought that he could do so by stating that the great mass of M. Louis's cases occurred before their thirtieth year, whereas fistula usually attacks persons who have passed that period of life. He thought, also, that fistula would be less frequent in France than in England, on account of the prejudice existing in the former country to hard seats.

Mr. Hancock considered that the author's proposition was not a universal one, and cited proofs, that in certain classes of cases the healing of fistulas and abscesses produces unmixed good. He laid down the rule, that whenever the pectoral and general symptoms had preceded the occurrence of fistula, it would be improper to operate; but, when general symptoms follow the abscess, the operation is beneficial. He then referred to the case of a gentleman who was presumed to be in the last stage of phthisis; and, in addition, was afflicted with fistula in ano, who had been advised to submit to the introduction of bougies, with a view to the consolidation of the strictures, but not to permit the division of the sphincter. Mr. Hancock subsequently divided the parts, and found a large purulent cavity existing near to the glutei muscles, after which the patient became perfectly well. He also referred to numerous cases of abscess caused by scybalæ, or foreign bodies, as bones and coins, which had been cured by operation. Whenever injury to the system results from the operation, he considered it to be due to the irritation set up by the operation, and not to the suppression of the purulent discharge. He criticized the author's term "suppurative abscess," considering that all abscesses are suppurative. He thought it unlikely that the occurrence of gonorrhœa or syphilis would cure consumption.

Mr. Dendy explained that the author had not intended to refer to such abscesses and fistulas as depend upon local causes, but to those only which have essentially a constitutional origin, and he altogether agreed in his opinions. Hippocrates had also observed, that the suppression of purulent discharge is sometimes followed by general disturbance and by insanity; and this he (Mr. Dendy) had seen confirmed again and again at the Infirmary for Children. He had no doubt but that gonorrhœa would be a good prophylactic in the cases referred to, but of course would not advise it as a remedy. He then referred to the present epidemic in Omer Pacha's army, as illustrative of the constitutional origin and emunctory character of collections of purulent matter.

Mr. Harrison stated that he wished it to be understood distinctly, that he had never suggested the propriety of obtaining a gonorrhœa or syphilis, either as prophylactic or curative of phthisis.—*Med. Times and Gaz.* Jan. 21, 1854.

## SURGICAL PATHOLOGY AND THERAPEUTICS, AND OPERATIVE SURGERY.

29. *Dislocations of the Ankle below the Astragalus*.—Dr. PAUL BROCA has contributed a memoir on this subject to the third volume of the *Mémoires de la Société de Chirurgie de Paris*. He enters at great length into the history of what he terms *subastragalian* dislocations. The displacements of bone which occur in the tarsal region are so numerous and varied, that M. Broca thinks it necessary to establish subdivisions and a methodical nomenclature. He divides them into three classes; but before proceeding to describe them, he gives an anatomical view of the relations of the astragalus to other bones.

The astragalus may be described as the key of the ingenious mechanism of the ankle; it is the bone which receives directly the weight of the body and transmits it to the other bones of the tarsus. Notwithstanding its small size, it articulates with four different bones, and its numerous articular surfaces take part in all the movements of this complicated region. Three superposed articulations are grouped, as it were, around the astragalus; the first is the tibio-tarsal, which is almost the exclusive seat of flexion and extension; the second is the *subastragalian*, under which term the author comprises, not only the two astragalo-calcanean junctions, but also the connection between the astragalus and the scaphoid bones. In the movements of this triple articulation, the astragalus moves with the bones of the leg, remains immovable, and the rest of the tarsus moves below it, so as to carry the point of the foot inwards or outwards, which constitutes adduction and abduction. The third articulation is the medio-tarsal. The astragalus and the calcaneum, constituting a solid mass, furnish a double articular surface on which the anterior range of the tarsus rests. The movements of flexion and extension are here very obscure; those of adduction and abduction hardly exist; but this articulation is the principal seat of those movements of torsion, which elevate one of the edges of the foot by depressing the other. The three articulations of the ankle may be moved: the first, the second, and they may therefore be dislocated separately or all at once.

M. Broca divides the dislocations into four groups: 1. The *tibio-tarsal* luxations, of which he does not here treat; 2. The *subastragalian* luxations, in which the astragalus preserves its relations with the bones of the leg, while the rest of the foot is carried in a variable direction; 3. The *medio-tarsal* luxations, in which the posterior range of the tarsus preserves its relation with the leg, while the anterior range is displaced altogether or in part; 4. The *luxations of the astragalus properly so called*, in which this bone, by a complex movement and as a result of extreme violence, is expelled from the cavity which it occupies without the other bones of the foot losing their mutual relations. This classification, says the author, is not an imaginary one, but is founded on real distinctions. The memoir is divided into two parts, one of which treats of subastragalian, and the other of medio-tarsal luxations.

The luxation of the os calcis has very rarely been observed; and, even after examining the recorded cases, M. Broca is induced to doubt the reality of this accident. Of the existence of dislocations below the astragalus there can be no doubt; and the case of Mr. Carmichael is related, in which it is shown that that distinguished surgeon, meeting with an accident on horseback, dislocated the os calcis backwards, the astragalus retaining its position. This kind of dislocation is distinguished from the luxation of the foot backwards, first, by the presence, on the dorsum of the foot and in front of the bones of the leg, of a round projection formed by the head of the astragalus; and secondly, by the absence of the tumour which is formed by the pulley of the astragalus behind the bones of the leg, when the whole of the foot is displaced. The lateral luxations of the subastragalian articulations are less rare than the luxation backwards; and the author has collected nineteen cases of this displacement. The signs of the luxation outwards are the following: the foot is in general carried in an abduction more or less considerable, or it may even take an entirely trans-

verse direction; the external edge of the foot is almost always elevated, and the internal edge rests on the ground. When there is a wound, it is situated on the inner edge of the foot, below or in front of the internal malleolus, and allows the head of the astragalus to project; the tendon of the *tibialis posticus* is pushed backwards or torn; the posterior tibial artery is distended or torn. The following are the signs of the luxation inwards: the foot is carried in the direction of adduction, its internal edge is more elevated than in the normal condition, which produces, to a certain extent, the form of *talipes varus*. When there is a wound, it is situated on the outer side of the foot, below or in front of the external malleolus. The tendons of the *extensor communis* are pushed back over the inner side of the head of the astragalus, which rests in general upon the dorsal surface of the cuboido-scaphoid articulation. The two most essential signs of these luxations are derived from the position of the astragalus in relation to the malleoli, and from the state of the movements of the foot. Whenever the head of the astragalus has preserved its normal relations to the bones of the leg, which fact may be always easily ascertained, the existence of a subastragalian dislocation is certain. The integrity of the tibio-tarsal articulation gives an important functional sign; for the movements of extension and flexion of the ankle, which are abolished in the tibio-tarsal luxations, and in the total luxations of the astragalus, are preserved in the subastragalian luxations.

The indications of treatment must be deduced from the foregoing considerations. When there is no wound, the reduction must be attempted as soon as possible. The extending forces must be applied at once to the dorsum of the foot and the projection of the heel, and must be exerted in a direction parallel to the axis of the leg. Counter-extension is to be made upon the leg, which ought to be flexed upon the thigh, in order to relax the *gastrocnemii* muscles. If manual force should fail, recourse must be had to pulleys. But it may happen that the reduction is impossible; and in such cases some authors have advised the use of incisions to relieve obstacles; but M. Broca thinks that such treatment is inadvisable. When there is a wound the case is more serious, and some surgeons have recommended amputation; but this can only be adopted in rare cases. The reduction of the luxation must be attempted, but it unfortunately fails more frequently than in luxations uncomplicated with a wound. The division of the soft parts, or the section of certain tendons may facilitate the replacement of the bones; but in spite of this, the luxation often remains irreducible, and it becomes necessary to extract the astragalus. The removal of this bone permits the straightening of the foot; and of eight patients who have undergone the operation, six have recovered. Removal of the astragalus is a less severe operation than amputation of the leg, and it presents the advantage of preserving the functions of the limb.

The latter part of M. Broca's memoir is devoted to the consideration of the *medio-tarsal* luxations, by which term are denoted the displacements which occur between the first and the second row of the tarsal bones; namely, in the articulation called *Chopard's*. The luxation will be *total* if the scaphoid and the cuboid bone are displaced simultaneously; and *partial* if one only of these bones be luxated. The conclusion at which the author arrives, is that *nothing* authorizes us to admit the reality of the total medio-tarsal luxation, and that the dislocations of the scaphoid bone which have been described by some surgeons, are really subastragalian luxations. M. Broca criticizes very ably the cases of astragalo-scaphoid luxations described by Boyer, Roux, Astley Cooper, and others, and considers that they are all incorrectly designated, and that by a more accurate diagnosis of these displacements remedial measures might be more successfully employed.—*Assoc. Med. Journ.* Dec. 23, 1853.

30. *Dislocation of the Astragalus*.—Mr. J. TURNELL communicated to the Surgical Society of Ireland (Dec: 17, 1853) the following case of this serious accident:—

James O'Brien, ret. 19, a mason's labourer, residing in Power's Court, a thin, active man, was admitted into Martin Ward of the City of Dublin Hospital, at eleven A. M. on the 24th of August last, having a short time previously de-

scended from a scaffold in the neighbourhood of Stephen's Green. The account which he gave of the accident was this: He said that, finding the platform on which he was standing beginning to yield, he sprang from it into the street with as much force as he was capable of using, intending thereby to jump clear of the timber and brickwork, which he thought would fall upon and crush him. He reached the ground in an upright position, alighting upon a broken brick, which turned with him as his left foot came upon it, and he fell upon his side in excruciating agony. When brought to the hospital, he presented the appearance of a man who had received a severe shock. He was ashy pale, trembling, and cold, feeling sick, and making an occasional effort to vomit.

On examining into the nature of the accident (which, being in the hospital at the time, I did at the moment of his arrival), I found the left foot dislocated inwards from the tibia and fibula, with the astragalus thrown outwards, as represented in the cast upon the table.<sup>1</sup> The particular condition of the parts was the following: Looking at the limb as it rested on the mattress, the calf of the leg lying upon the bed, it presented somewhat the appearance of an aggravated case of talipes varus. The sole of the foot looked obliquely inwards, a deep angular hollow existing in the situation of the inner malleolus, with an acutely prominent projection, all but perforating the integument, and white and glistening from extreme tension, presenting at the outer ankle, caused by the malleolar extremity of the fibula, which was all but thrust through the skin. Two inches anterior to this point, lying upon the outer border of the tarsus, external to the last of the tendons of the extensor communis digitorum muscle, was a hard projecting mass of irregularly ovoid form, immediately beneath the skin, formed by the articulating surface of the luxated astragalus.

The foot itself, from the instep to the toes, bore a natural appearance, as did also the sole when viewed from below. The space beneath the internal malleolus, posterior to the scaphoid bone, which should, in the normal state, be occupied by the neck of the astragalus, presented a raised puffy swelling from effused blood. The internal malleolus was sunk deeply, occupying the position of the body of the astragalus, whilst the external malleolus projected directly outwards. The tibia and fibula were uninjured, there being no fracture of either of these bones.

Reduction was attempted (as soon as time had elapsed for taking a cast, or in about an hour from admission into hospital) and effected in the following manner: The patient was laid upon his back, the pelvis fixed, the thigh bent upon the pelvis, and fixed also, the leg bent upon the thigh, and extension made by assistants from a double clove hitch fastened round the foot, whilst direct pressure was put upon the displaced astragalus with the right hand, the foot itself, at the same time, being rotated outwards with the left. In this way reduction was effected, the bones slipping back into position within a minute, and all deformity disappearing at once.

The leg was placed upon a McIntyre's splint, and cold, by the water battery, applied. He was ordered also the following pill to be taken regularly every fourth hour: R. Calomel gr. ii; Pulv. Jacobi ver. gr. i; Pulv. aloes gr. ij; Pulv. opii gr. ½. Ft. pil.

A combination long employed by Dr. Peile in cases of laceration to tendinous structures, and where tetanic affections might be deemed as likely to ensue.

The succeeding day there was effusion into the joint, producing an increase of girth of about one inch. The patient complained, however, of no pain, and said that he felt quite well again. The water dressing was continued until the 30th, when effusion having almost altogether subsided, it was discontinued, and a starch bandage applied. On the 30th of September he was discharged from hospital with the perfect use of his foot, and returned to his daily labour again.

The points for consideration in this case are: 1. What was the exact nature of the injury in its anatomical relations? 2. By what agencies was this dis-

<sup>1</sup> A copy of this cast has been presented to the Museum of the Royal College of Surgeons.

location produced? 3. Had I failed to reduce it, and restore the astragalus to its normal position, what steps would have been the best to pursue?

Firstly, then, as to the particular form of this dislocation. The astragalus had altogether lost its position between the tibia and os calcis, with the exception of the extremity of the head, which, lying on the edge of the scaphoid cavity, appeared to rest with its neck across the os calcis at the calcaneo cuboid articulation. The bone was displaced directly outwards, its attachment to the calcaneum having been ruptured, that portion on its under surface which naturally rested on the os calcis, being placed over the articulation of the calcis with the cuboid bone. The internal malleolus rested in a hollow, sunk down upon the os calcis, occupying the position normally held by the astragalus, whilst the external malleolus was raised up, and kept prominently outwards by the body of this bone wedged beneath it. The external lateral ligament, though tensely stretched, did not appear to have had either of its fasciculi ruptured.

Such being the nature of the accident, the second point for consideration is the immediate cause, or rather manner of its occurrence. This I would suppose to have been the following, viz: That the man, finding the scaffold was giving way, and making a violent effort to jump clear of it, consequently, not only came to the ground (a height of about twenty feet) with his full weight, but superadded to it, with the force of the impetus of the spring—a combined power of no ordinary magnitude. Alighting, then, on a revolving body, such as a rolling brick, fracturing of the limb was prevented by the force acting at an angle, the foot turning inwards at the instant of downward progress being arrested, whilst the *vis a tergo* of the weight of the body still continuing to act, the internal malleolus came to bear like a lever upon the side of the astragalus, pushed upon it laterally, and displaced it off the os calcis, throwing it outwards upon the cuboid, and elevating the fibular malleolus in the manner shown by the cast.

Regarding, then, the foot in this position, my duty of course naturally was to restore it to its normal condition if possible, which in the present instance I was enabled to effect; but failing to do so, what steps is the surgeon to adopt for the permanent welfare of his patient in simple dislocation of the astragalus? This is the third and principal point for consideration.

In forty-six cases of this accident recorded by Mr. Turner, of Manchester, I find six only to have been completely reduced; and of these six, three were accompanied by fracture, one of the tibia alone, second of the tibia and fibula, and the third of the os calcis.

In two cases the bone was *partially reduced*; in ten, it was *suffered to remain in its new situation*; in six, it was *partially excised*; in eighteen, it was *wholly excised*; and, in four, the limb itself was removed by amputation. Of these forty-six cases, sixteen were simple dislocations, and thirty were complicated or compound. It is with the first only that we have now to deal.

Of these sixteen cases, then, three were reduced, the patients regaining useful feet. In eight instances the astragalus was left undisturbed in its new position. Five of these cases did well, but the form of luxation in each was the same, namely, that directly backwards, “the astragalus, resting in the interval between the posterior part of the tibia and the tendo-Achillis, a spot sufficiently spacious to give occupancy to the dislocated bone without much removal of the tendon of the heel, and without direct pressure on the integuments of this region.” In the other three cases, where the bone was suffered to remain, and where the direction of the dislocated bone was either *forwards*, *forwards and outwards*, or *forwards and inwards*, there was a far different result. In the first, there was a permanent deformity; in the second, ankylosis of the joint; and, in the third, permanent deformity and lameness.

In the single case of *partial excision*, there was a useful foot; and in the two cases of *complete excision*, there was the same result. The remaining two cases were submitted to amputation. We have left, then, for consideration, out of these sixteen cases of simple dislocation (after deducting the three reduced and the five luxated backwards as not appertaining to the form of dislocation now before us), eight cases from which to draw our conclusions as to the mode

of treatment to be adopted, namely, whether to leave the astragalus in its new situation, or to excise it partially or *in toto*.

Five cases are to be included under the first head, because the two which became subjects for amputation were cases of this kind, where reduction had been attempted and failed, and where the bone had been left to nature. Now, of these five, we find ankylosis of the joint in one, permanent deformity and lameness in two, and loss of limb in the remainder. This does not argue favourably for allowing the bone to remain. Then as to excision partially or altogether: We have three cases, *one partial*, performed at the time of the accident, and *two complete*, the bone being removed on the thirty-third day in one instance, at the end of ten weeks in the other, sloughing having taken place in each. These three cases recovered with useful feet, still, in the two latter, not until the luxated bone had been removed. From the results of these cases, then, it would appear that in simple luxation of the astragalus forwards, forwards and inwards, or forwards and outwards; and, in fact, in all situations, excepting that directly backwards, if the surgeon should be foiled in reduction, he should at once remove the bone; and I would go even further, in the instance of a labouring man, and say, remove the foot by Syme's operation, leaving him Nature's pad, the integument of the heel to stump upon—a far more serviceable termination to his leg than an ankylosed and weighty foot. This I have no hesitation whatever in recommending. I am an advocate for conservative surgery, so far as the objects to be derived from it are *real gains and undoubted advantages* to the individual, such, for instance, as from excision of the elbow-joint, or partial amputation of the hand, whereby a member, though maimed, still is left more efficient than any that art and ingenuity could supply. This is right, this is what we should use our every effort to secure. But I say conservative surgery may be overdone, as I feel convinced it often is in the case here before us. I am speaking now from the experience of three cases that have come under my own observation, in each of which the bone was removed at different periods after the receipt of the injury, and in each of which the individual gained what would, I am convinced, be reported as a *useful foot*. This is the point to come to. The question for consideration is the power of progression that remains, the capability of taking exercise, and that exercise which a labouring man must do to enable him to earn his bread. These three cases would, I have no doubt, have been entered in a statistical report as recoveries with *useful feet*, but in neither of these three cases can the individual earn his bread.

One of these was a patient of my own, from whom I removed the astragalus (or rather, I should say, the greater portion of it, for it was fractured obliquely across, as is so frequently the case) in 1850. He writes to me now (in 1853) in answer to my question as to how he is going on, to say: "I can bear considerable pressure on my foot, and it seems to increase in strength, but I could, I think, get on better if I had a boot that would support me from the knee. I cannot yet do any work." This man tells the truth, and explains the matter in a word. *He has a foot that he can use, but he has not a useful foot*. He has a foot that for a clerk in an office, a solicitor, a commissioner, a man of private fortune, &c. &c., would do well enough, and I have no doubt be regarded by each as a very satisfactory cure, but he has not the foot for hard work. Could he have had this? I believe he could. Had I, in 1850, dissected out his entire foot, nipped off the malleoli, and brought up the pad of heel from below, instead of taking out the dislocated astragalus alone, he would not now, in 1853, be suggesting and of course wishing for a *support from the knee*. This question of conservative surgery, too, is to be looked at in another light, viz: its power of diminishing the risk of loss of life. This is, certainly, the all to be regarded point—to it every man must bow, but that argument is not in its favour here. Who that has had experience of the two cases under consideration, namely, the after treatment of a case of open ankle-joint from which the astragalus has either been removed by excision or left to come away, and of Syme's operation performed for accident on healthy structure, will make a comparison as to the risk to life between the two. Look at the inflammation, suppuration, sloughing, abscesses, and perhaps diffuse inflammation; the water-dressing, poultices,

incisions, splints, and swinging-cradles, with three months or more in bed; the opiates, tonics, bark and acid, wine and porter, and change of air, connected with the one, and the two sutures, strap of plaster, light dressing, and slight confinement required for the other. Some will say their experience of the latter does not lead them to regard it with such favour, that cases have occurred which induce them to modify the opinion they once formed. But, recollect, those amputations of the foot were not for *accident*, they were operations for *disease*. This is a different case altogether. Here there are infiltrated tissues, sinuses, ulcerated cartilages, perhaps unhealthy bone, a state of things far different from that of a clean cut through healthy parts; a state of things produced in, if not originated by, a strumous constitution, and which must be taken into account as influencing the one, and having no connection whatever with the other. This leads me to speak as strongly as I do, and I feel convinced that if removal of the foot by Syme's operation be adopted in our hospitals (upon the class of persons who become the subjects of this accident in cases of irreducible dislocation of the astragalus, either simple or compound, excepting always luxation directly backwards), a far better set of extremities in the aggregate will be given to the sufferers than they now have, and that they will, in very many instances, be enabled to labour in ways that they cannot do now.

There is, however, one modification that I would make, and that is, namely, in commencing the operation, I would do so in the form most suited in each particular instance for the *mere removal* of the bone; so that if, on dividing the integuments directly over it, I found the astragalus so far detached that I could free it, and bring it *easily* away, and close the joint, I would do so, giving the man the chance; but if I found it firmly attached, both by its connecting ligaments and surrounding textures, having, as it were, to be dug out of the joint, I would then proceed at once to disarticulate the foot.—*Dublin Medical Press*, Dec. 28, 1853.

31. *Scrofulous Caries of the Left Astragalus; Excision: Cure, with the Formation of a Fresh Joint.*—Mr. S. F. STATHAM communicated the following case to the Royal Medical and Chirurgical Society, Jan. 24, 1854:—

Henry C—, aged five, of strumous habit, and subject to weakness of the left ankle from birth, became affected at Christmas, 1851, with a swelling below and on the outer side of the left ankle, which was blistered. Since May he has been under hospital treatment; latterly, there have been formations of matter. The integument, after a few days' rest, appeared discoloured only over the situation of the astragalus, which bone could be readily reached by the probe. The patient being under the influence of chloroform, August 27, 1852, Mr. Statham, assisted by Messrs. Marshall and Clover, proceeded to remove the diseased bone. He made one incision, three inches long, parallel to the outer border of the extensor tendons of the toes, and then another to fall into the middle of this from the outer side of the foot. Having detected carious disease of the astragalus by the finger, he divided the neck of the bone with a saw, and readily removed it from the calcaneum. A proper splint was applied, and the case terminated favourably. The author concluded with some remarks upon the feasibility of the operation, which he believed had never been performed for a similar affection.

Mr. Solly said that the Society were much indebted to Mr. Statham for his very interesting case. From his (Mr. Solly's) experience, however, of similar cases which had come under his care in St. Thomas's Hospital, he did not think it necessary that the whole of the astragalus should have been removed. It appeared in Mr. Statham's case that the head of the astragalus was healthy, and that the disease did not necessarily involve the ankle-joint. He thought, therefore, it would have only been necessary to gouge out the diseased portion of the bone. He had adopted this mode of proceeding in a boy lately under his care in the hospital, with the best success. The boy's health, which had been much shattered previous to the operation, soon improved, and he got rapidly well. In this mode of proceeding, too, so large an incision was not

necessary, as in Mr. Statham's operation, by which several important tendons were probably divided.

Mr. Fergusson, whilst admitting that we were indebted to Mr. Statham for his case, could not agree with all that had been stated in the paper. He thought the case another step in advance to make surgery as perfect as it was in human power to do. This and similar cases drew attention to that style of conservative surgery by which the removal of a merely local disease left the affected member as nearly as possible complete. In Mr. Statham's case, considering all things, the foot, judging from the cast sent round, was wonderfully perfect. At the same time he had been astonished to hear that, if this operation had not been carried out, it was intended to have amputated below the knee. Such a proceeding, in his judgment, was not in accordance with the principles of conservative surgery, unless, indeed, there was more disease in this case than had been stated. It was of the greatest importance that views respecting conservative surgery should be placed before the profession; for no doubt very many cases of amputation had taken place, in which the simple removal of the diseased portion of bone would have been sufficient to have effected a cure. He agreed, as far as he understood, with the views which had been advanced by Mr. Solly, viz. to remove, in all practicable cases, the portion of diseased bone, instead of the entire bone itself. In Mr. Statham's case the whole of the astragalus was removed, and in this particular instance he (Mr. Fergusson) was not disposed to find fault with the proceeding, as the bone was so much diseased; but in many cases the entire bone had been taken away unnecessarily. The removal of a portion, or even the interior of a bone, so as to leave a mere shell, was a much better proceeding, and caused little deformity. He had a strong impression upon his mind, as the result of his experience, with respect to this partial removal of bones of the tarsus. He had rarely met with the os calcis so diseased as to require its entire removal.

Mr. Solly was sorry if he had not made himself sufficiently understood when he rose before, but Mr. Fergusson had fully supplied any omissions which he might have made. He (Mr. Solly) was desirous not to enlarge upon this subject, as his views on the matter were already in print, and could be referred to. In one instance he had operated on both feet, removing portions of the os calcis, astragalus, fibula, and tibia, and the patient got quite well.

Mr. Statham observed, that only the tendons of the peroneus tertius and flexor brevis of the fifth toe were divided, both of little importance. This case appeared to him similar to those of other joints in surgery, as the elbow, for instance, where, after an injury, two courses were open to the surgeon—either to excise the injured parts entirely, or to content one's self with extracting the separated fragments. The first plan gives a new joint in the course of some months; the last, a stiff one in the course of a year or more. Now this may be strictly applied to scrofulous caries, as with cancer, we may gouge, or cut out piece after piece, yet, unless a sufficient quantity be removed, such interruptions occur in the course of the after-treatment, as seriously to endanger the new joint. Without speaking of other parts, it is certainly advisable, when meddling with a scrofulous joint, and wishing to make a new one, that all the parts diseased should be removed. In connection with these remarks must be mentioned the very common practice of publishing the accounts of cases before the result is known. Nothing can be more uncertain than the after-occurrences to which the cases of gouging are liable, so long as any fistula remains behind. In the present case the cure was perfect, for he had happened to see the patient that day, the mother being recommended to produce the patient quarterly, that his health may be attended to.

Mr. Charles Hawkins believed that in cases of the kind detailed by Mr. Statham, the disease affected the body of the bone, and involved a great portion of it. He, therefore, thought we should be more conservative in our surgery, by removing the whole of the bone, for we never could be satisfied if all of the diseased portion were removed by gouging, which operation we might have to resort to again and again. He mentioned a case in which, after gouging, a fistulous opening into the joint was left, making the limb useless. He objected



to half operations, which left sufficient disease to do mischief, and, therefore, could not be called "conservative surgery."

Dr. Balfour thought that we had heard too little of the constitutional treatment in these cases, and too much of the use of the gouge. He mentioned a case of diseased bone, in which, after laying open a sinus, and giving a boy cod-liver oil, a very good ankle-joint had been left.

Mr. Fergusson remarked that of course no prudent surgeon would resort to the knife until all constitutional means had failed; it was to cases in which constitutional remedies failed that his observation applied. Mr. Hawkins's remarks did not shake the opinions which he (Mr. Fergusson) had advanced. His remarks had reference to local disease of the bone. He did not dispute the propriety of removing all the bone in this case, and in many others, but it was his conviction that the proper proceeding in the majority of cases was to remove only the diseased portion. He had seen hundreds of cases in which a small portion of the bone only was diseased, the remaining parts being quite healthy. As soon as the diseased portion was removed the healing process was remarkably rapid. There was danger of interfering with healthy bone, but the removal of the carious portion of the bone was attended usually by the best results. The subject altogether was too extensive to go fully into on that occasion, but it might be stated generally, as a rule, that it was better to remove only the diseased portion of bone in these cases. In some instances it might be necessary to remove all the bone.—*Lancet*, Feb. 4, 1854.

32. *On the incomplete Luxation of the Tibia forward.*—The third volume of the *Mémoires de la Société de Chirurgie de Paris* contains a paper on this subject by M. DÉSORMEAUX, illustrated by a case which came under his notice at the hospital Bon Secours. The patient became accidentally entangled in some machinery, by which accident direct violence was applied to the region of the knee, and a partial dislocation of the knee forward was the result. The luxation was reduced, but the patient subsequently died of consecutive disease. On examining the knee-joint, it was found that the articular capsule was uninjured, but it contained a little serosity mixed with blood; the ligamentum patellæ, the lateral ligaments, and the posterior and semilunar ligaments were healthy, and the crucial ligaments were infiltrated with blood. M. Désormeaux considers the principal symptom of this luxation to be the projection of the tibia forward, permitting the anterior part of the glenoid cavities of this bone to be distinguished by the touch; the projection of the condyles of the femur in the popliteal space, and the consequent increase of the antero-posterior diameter of the articulation, the absence of real shortening, and the position of the patella, the anterior surface of which looks forward and upwards, and presents remarkable depressions at its sides. The best method of reduction consists in the flexion of the limb, combined with a slight extension.—*Assoc. Med. Journ.* Dec. 23, 1853.

33. *Treatment of Dislocation complicated with Fracture.*—In September, 1851, a man, aged 68 years, came to M. RICHER with a dislocation of the upper extremity of the humerus, with fracture of the anatomical neck of that bone. He was then in a state of complete intoxication, but the next morning he was able to communicate the following details: He was descending a narrow staircase, when his foot suddenly tripped and he fell backwards. In this fall, the left shoulder struck the angle of one of the steps; and, when the man was lifted up, he could no longer use his arm, which was perfectly serviceable before the accident. The man was very thin, and his limbs were easily examined. In front of, and rather lower than the left acromion, there was an evident angular projection, at the summit of which was a deep ecchymosis, having a transverse direction; this was the point in which the patient said he had fallen. Behind and below the acromion was a visible depression, into which the index finger penetrated with facility, proving that the head of the humerus had passed out of the glenoid cavity. Above this depression, the acromion formed a well-marked projection, particularly when compared with the corresponding part of the opposite side. On carrying the hand into the

axilla, it first encountered a hard cord, stretched from the posterior border of the axillary cavity to the anterior, a little obliquely from below upwards and from behind forwards; this consisted of the flattened tendon of the latissimus dorsi. More posteriorly and internally, another thicker projection was observed. By carrying the hand to the summit of the axillary hollow, a tumour was found of an irregularly round shape, movable, and apparently isolated, for it could be moved in all directions. Suspecting that this tumour was merely the head of the humerus thrown out of its cavity, M. Richet rotated the lower end of the bone, but the tumour was not at all moved, nor was any crepitation perceived. These rotatory movements produced very great pain; and, on applying the hand to the angular projection above described at the anterior extremity of the shoulder, it was found to be affected by the rotatory movements impressed upon the inferior extremity of the humerus; this led M. Richet to ascertain that it was formed by the upper end of a fragment belonging to the body of the humerus. It was irregular, with rather well-marked dentations, some of which were entangled with the fibres of the deltoid. The movements of abduction and elevation were impossible; and flexion of the forearm upon the arm was effected with great difficulty.

The case was, therefore, evidently one of fracture of the surgical neck of the humerus, complicated with dislocation of the head of the bone. As the pain in all the muscles surrounding the shoulder-joint produced contractions, which prevented the apposition of the two fragments, the patient was put under the influence of chloroform, to obtain, if possible, a complete resolution of this muscular action, and to enable the examination to be concluded. In less than two minutes, the patient became quite insensible, with complete relaxation of the muscles. It was then easily ascertained—1st, that the head of the humerus was dislocated into the summit of the axillary hollow, where it formed an irregularly rounded tumour, very movable, and detached from the rest of the bone; 2d, that the upper end of the lower fragment of the humerus was displaced forwards under the deltoid; 3d, that there was another little fragment completely detached, but entangled in the fibres of the deltoid, and which had not previously been detected, in consequence of the contraction of this muscle.

After the patient was restored to consciousness, the lower portion of the bone was easily disengaged from the fibres of the deltoid, and crepitation was then perceived.

On the 12th of September, the patient was again put under the influence of chloroform. Taking advantage of the complete relaxation of the muscles, which ensued in a minute and a few seconds, M. Richet seized the man's arm, and, bringing it forwards and downwards, he disengaged very easily the upper extremity of the lower fragment from the deltoid fibres. The arm was then intrusted to an assistant, and M. Richet grasped the convexity of the shoulder with both his hands, the two thumbs resting on the acromial projection, while, with the four fingers of each hand directed towards the summit of the axilla, he endeavoured, by careful efforts, to bring back the head from within outwards towards the glenoid cavity. Notwithstanding the slight hold afforded by the fragment, it was felt to be yielding by degrees, and the reduction was soon completed, without any noise, and rather insensibly than suddenly. After that time, the two fragments remained in contact, and the regular rotundity of the shoulder was completely restored.

The next morning an apparatus was fitted, consisting of an axillary pad made of charpie, covered with a compress, carried up to the summit of the axilla, in order to prevent any fresh displacement in this part. The forearm was bent upon the arm at an acute angle, and the hand placed upon the sound shoulder, so that, the lower extremity of the humerus being carried forwards, the upper extremity of the fragment was carried backwards, in an opposite direction to that which it formerly took. The contact then appearing to be as perfect and secure as possible, the parts were fixed in this position by means of a bandage which left uncovered the convexity of the exposed shoulder, in order to allow the observation of any changes which might subsequently occur in this region.

On the 13th of September, the patient had slept well, and the shape of the shoulder was perfectly natural. On feeling the part, a rather considerable effusion of blood was found to have taken place into the articulation, and the splinter formerly mentioned was now perfectly appreciable at the anterior and external part of the shoulder.

On September 4, and following days, no new symptom occurred. The patient ate well and slept well, but he complained of numbness in the arm and forearm.

On October 4, the effusion of blood had disappeared. The bandage was removed, when it was ascertained that the reunion of the fragments was effected, and a simple sling was applied, which allowed of slight movements, sufficient to prevent anchylosis, but not sufficient to break the callus, or even to retard its formation.

On October 30, the bandages were removed, and the patient had a bath. The callus was perfectly solid, but the movements in the scapulo-humeral articulation were almost annihilated; and it was, in fact, observed that the movements of the arm were effected by the sliding of the scapula upon the thorax. The patient was, however, recommended to exercise the arm as much as possible.

On November 24, the patient was still in the hospital, and it was found that there was a very well marked degree of mobility in the scapulo-humeral articulations, which gave hopes of still further power of motion. The splinter formerly described remained still detached and movable, but, every time it was disturbed, the patient experienced severe pain. The numbness of the arm and forearm had almost disappeared.

On June 27, of the next year, the patient came to the hospital for another complaint. It was then ascertained that he had very little difficulty in moving his shoulder. He lifted his arm easily to his head, and executed all the other movements which he was directed to perform, without experiencing the slightest pain. The splinter had disappeared, or at least was hidden among the deltoid fibres, which had become developed by exercise to such a degree that the rotundity of the shoulder, compared with that of the opposite side, was perfectly normal.

M. Richet, in commenting on this case, comes to the following conclusions:—

1. That, contrary to the opinion universally adopted, dislocations of the humerus and of the femur, complicated with fracture of the extremity of the dislocated bone, may and ought to be reduced immediately; and the fracture, thus brought back to a simple state, should be treated like other solutions of continuity of the bone.

2. That, to perform this reduction, the patient should be subjected to the most complete anæsthesia, in order that the muscular action may be entirely annihilated; and that, of all anæsthetic agents, chloroform appears hitherto to be the best.

3. That clinical experience, reasoning, and experiments upon the dead body, agree in demonstrating that, as the muscular power is the principal, and, in fact, the only obstacle to the replacement of the bone, so, when this is annihilated, it is not necessary to employ a lever of greater or less length to apply to it forces of extension, but that it is then sufficient to exercise directly upon the dislocated extremity pressure which may push back the head of the bone into the articular cavity.

4. That, in the very rare cases in which the fibrous tissues form an obstacle to the replacement of the bone in its cavity, it is to this method of pushing back the head that we must have recourse by preference, as being more rational and more efficient than extension.

5. That, if the proceeding by extension is to remain as a general method in the treatment of dislocations without fracture, yet we must admit that the proceeding by pushing back will be always, even in such cases, a powerful auxiliary; and, further, that alone it is applicable, to the exclusion of extension, in the treatment of dislocations, complicated with fracture of the dislocated bone.—*Assoc. Med. Journ.* Dec. 9, from *Mémoires de la Société de Chirurgie de Paris*, tom. iii. fasc. 4.

6. That the osseous capsule which envelops abscesses, occurring in the cancellous texture, is analogous to the external bone growth (*osteophybildung*), so common in the vicinity of ulcers. He observes that it frequently happens to healthy bones that their structure becomes absorbed externally, while fresh osseous formation is actively going on in their centres; just as, in the process of their development, absorption occurs internally—to form the medullary canal—while new bone is being simultaneously deposited on their exterior.

This fact he considers explanatory of the condition of many flat bones—as those of the cranium, or the scapula, and the ileum—which, in their perfect condition, contain more or less spongy substance, and which, in old age, become often thin as paper, while, at the same time, they consist wholly of compact osseous tissue.—*Monthly Journ. Med. Sci.* Jan. 1854, from *Henle und Pfaff's Zeitschrift*, Bd. iii. heft 2.

35. *Wire Gauze for Bandages, Cradles, and Splints.*—Specimens of this article, invented by Mr. STARTIN, were exhibited to the Medical Society of London (Jan. 28, 1854). The material employed is flattened copper or iron wire, and costs about 1s. 4d. per square foot; and, if the expense were not an object, the materials might be plated. The usual mode of application is first to obtain a pattern for the splint by means of cartridge-paper, and then carefully to cut the sheet of gauze to the pattern. The splint further requires that the edges should be cut transversely at intervals, and the free edges covered with thin lead or adhesive plaster. Folds of linen, wet with water, are placed upon the limb underneath the splint, and the whole apparatus is kept in position by rollers or tapes. The merits of the invention were said to be those of lightness, cheapness, coolness, and affording the opportunity of readily applying lotions without disturbing the bandages. It was recommended in fractures, resections of the joints, and, indeed, in almost all instances in which cradles and splints are ordinarily employed.—*Med. Times and Gaz.* Feb. 4, 1854.

36. *New Operation on the Foot.*—Dr. GAY exhibited to the Medical Society of London (Jan. 14, 1854) drawings, and gave the particulars, of a case in which he had performed resection of the foot on a new plan. He entered into some details as to the several forms in which resection had hitherto been practised, and then considered the propriety of leaving the great toe entire when the case called for the removal of all the other metatarsal and phalangeal bones. He stated that the objections hitherto urged against such a procedure were—first, the inconvenience which would attend the projecting part; and, secondly, the want of sufficient attachment to the internal cuneiform bone, to render the toe of any service in progression. He was now, however, of opinion that, if the middle cuneiform bone he also allowed to remain, the attachment will be consolidated, and the whole toe made serviceable. His patient was aged 22 when operated upon in August last; and now (after five months) is able to walk with ease, and is obtaining yet greater facility in progression. Mr. Gay especially referred to two circumstances as worthy of note: 1. That the toe becomes curved outwards, and thus receives the pressure at about the point where the ball of the little toe formerly received it. This facilitates progression. 2. The absence of the other toes seems to be compensated for by an increasing muscular and bony development of this, the remaining toe; and it is probable that the great toe will acquire far more than its normal size and power.—*Ibid.*

37. *Treatment of Aneurism and other Vascular Tumours by the Injection of a Solution of Perchloride of Iron.*—During the present year, the attention of French surgeons has been closely directed to a new method of treating aneurisms, viz: that of producing coagulation of the blood in the aneurism by injecting a few drops of a solution of perchloride of iron into the sac. The merit of first bringing this method prominently under notice is due to the late M. PRAYAZ, of Lyons. We propose to give an abstract of what has been said and written for and against this method.

*History.*—In a letter to M. Marjolin, published in *L'Union Médicale* for May 12, M. Prayaz gives the history of the treatment.

The author states that, in the year 1823, he commenced experiments on the means of preventing the absorption of poisons. Cauterization of the poisoned wounds by galvanism appeared to succeed best; this he first tried in cases of bites by vipers, and by Indian snakes, and of mad dogs. In his experiments, he observed the readiness with which blood coagulated under the action of galvanism; but it did not occur to him to apply this principle to the treatment of aneurism, until M. Velpeau had stated that a coagulum was produced by in-

roducing a needle half-way into a vessel, and there leaving it. This led M. Pravaz, by a series of experiments, to the conviction that galvano-puncture was likely to be a very successful treatment; and he communicated his idea, in 1831, to several surgeons. For many years this method remained in abeyance, being merely referred to in works on medicine and surgery; and it was not until 1845 that M. Pétrequin successfully employed galvano-puncture in aneurismal tumour in the course of the temporal artery. M. Pravaz observed with interest the applications of galvano-puncture which were made since 1845 in most countries of Europe. He was led to believe that this method, from the care which it required, from the frequent imperfection of the apparatus, and, perhaps, from a certain idiosyncrasy in the blood, often failed.

In 1851, he first attempted to produce coagulation by employing voltaic electricity as a means of conveying through the tissues one of the elements of a saline solution placed on the part. This plan had been partly proposed by Strambio in 1847. M. Pravaz thus describes his discovery of the treatment by injection of perchloride of iron:—

"In the course of the experiments which I have related, the object of which was either to abolish acupuncture while galvanism was retained, or to reduce the operation to the introduction of a single needle, I observed that perchloride of iron instantaneously caused a solution of albumen to coagulate in mass. Considering, at the same time, that the preparations of iron are generally harmless, when administered in a moderate dose, I was led to reflect whether, in place of endeavouring to suppress acupuncture in the treatment of aneurism, it would not be better to renounce electricity, and retain puncture as a means of introducing the coagulating material into the sac. I thought to realize that idea by means of the trocar, which is used in the exploration of tumours. Those, however, which are in common use are not sufficiently delicate; and I waited the opportunity of a visit to Paris to have some made fit for the end which I proposed. M. Charrière perfectly fulfilled my wishes in this respect. I obtained, also, a small syringe, the piston of which was moved by means of a screw, so that the injection was performed steadily and continuously, and could be regulated at the will of the operator.

"On my return to Lyons, I attempted, with the assistance of my son, to produce coagulation of the blood in the carotid artery of a rabbit; but the artery was too delicate to allow the trocar to be easily introduced without transfixing it. . . . I had proposed to recommence my experiments on larger animals, when a severe illness interrupted my researches. They would probably have been altogether suspended, if the stay of M. Lallemand in my house had not both restored me to health and reanimated my scientific ardour."

MM. Pravaz and Lallemand then performed experiments in conjunction, in which M. Pétrequin participated for a time.

"The limits as to quantity which M. Lallemand and myself have determined, cannot be passed without producing symptoms of intoxication, and dissolution of the clot; but the injection of an excessive quantity may give rise to severe inflammation of the sac, consecutive ulceration, and expulsion of the coagulum.

" . . . M. Lallemand and I have estimated the quantity required to coagulate each centilitre (about one-fourth of an ounce) of blood as being three drops. I would even go below this limit; but, in order to furnish a sure guide to the operator, the degree of concentration of the solution of perchloride of iron must be observed."

In an article published in the *Gazette Médicale* for October 1, M. Pétrequin, of Lyons, claims to share equally with M. Pravaz the merit of originating this mode of treatment. He states that, in 1845, he proposed to himself to search for an agent possessing the properties of fluidity, smallness of volume, capability of producing coagulation without carbonizing the blood, non-liability to produce excessive irritation, and capability of being absorbed without danger. He also says that, in 1852, M. Pravaz proposed to him to perform a series of experiments with perchloride of iron. They performed some experiments in conjunction; but, subsequently, M. Pétrequin continued his researches independently; experimenting, however, with perchloride of iron and manganese.

He does not, however, appear to have actually employed this agent in the treatment of aneurism.

The *mode of operation* is thus described by M. Lallemand: "The method proposed by M. Pravaz consists in coagulating the blood in the vessels by the injection of a few drops of a solution of perchloride of iron at its maximum of concentration. The injection is effected by means of a very delicate trocar, which must be introduced very obliquely through the walls of the artery by a kind of rotatory movement. To this trocar is fitted a syringe, of which the piston moves by means of a screw, so that the liquid may be injected steadily, and the quantity accurately measured. At the time of operating, the flow of blood in the vessel must be arrested." In the treatment of aneurism, the solution must be introduced into the aneurismal sac, and the artery must be compressed for four or five minutes.

*Cases.*—At the meeting of the Academy of Medicine on the 8th of November, M. Malgaigne read a paper on the treatment of aneurism according to the method of M. Pravaz. The article is published at length in the *Union Médicale* for November 10. The author passed in review the history of the operation from the reading of a letter from M. Lallemand before the Academy of Sciences up to the present time. He referred to the experiments of Lallemand, Giralduès, and Debout, and to the cases of MM. Raoult Deslongchamps, Niepce, Serre, Velpeau, Lenoir, Soulé, Alquié, Defour, Jobert, and himself.

We have collected the reports of several cases from the journals in which they were reported, and shall avail ourselves of M. Malgaigne's essay in the history of others. The whole of the cases, from No. I. to XI. inclusive, will be found in M. Malgaigne's paper.

*CASE I.*—At the meeting of the Surgical Society of Paris on March 30, M. Larrey related a case communicated to him by M. Raoult-Deslongchamps. The disease was aneurism of the supraorbital artery, of the size of a small pigeon's egg. It could be emptied by pressure. M. Deslongchamps injected a few drops of the concentrated solution of the perchloride, but at first failed, in consequence of the formation of a clot at the end of the canula. The next day, ten or twelve more drops were injected; and, in three minutes, the tumour became hard, and the pulsations disappeared. The swelling after this continued to diminish, until, at the end of a month, there was no trace of the aneurism beyond a little redness and slight thickening of the skin. (Abridged from *L'Union Médicale*, April 9, 1853.)

At a meeting of the Academy of Surgery on May 4, M. Larrey read a letter from M. Deslongchamps, in which the subsequent history of his case was reported.

On March 13, in the situation of the aneurism, the skin was a little more red and elevated than on the opposite side. There was also some thickening and induration. On April 15, M. Deslongchamps saw the man, who told him that he had been seized with a catarrh (from exposure to cold) on the 7th, and that he had had violent fits of coughing, which, in two or three days, caused the situation of the tumour to become more red and swollen. He also felt pulsation in it, which increased for a day or two. The cough then diminishing, the swelling and pulsation became less after the patient had worked some hours at his forge (which he had not ceased to do since discharged by M. Deslongchamps). On April 15, M. Deslongchamps sent for him, to ascertain the results of the operation. He then found that, in the situation of, or rather a little to the outside of, the primary affection, there was a flattened tumour, with ill-defined edges, and very red, but not uniformly so. On applying the fingers, feeble pulsations were felt, but only on the lower half.

M. Deslongchamps did not think that this was a return of the disease, but merely a result of the enlargement of the collateral arteries, which had taken place in the formation of the original aneurism—in fact, an erectile tumour.

M. Robert at first, and afterwards M. Malgaigne, have doubted whether the tumour first operated on was an aneurism at all.

*CASE II.*—On April 25, a case was related to the Academy of Sciences, which had been operated on by M. Niepce. The aneurism was popliteal: five minutes after injecting the perchloride of iron, the tumour became very hard; and, on

removing pressure from the femoral artery, pulsation was found to have ceased in the sac. On the next and following days, there was severe inflammation in the parts operated on. On the eleventh day, fluctuation was perceived at the inner side of the tumour, and about two and a half drachms of purulent serum escaped on making a small puncture. On the twentieth day, the place of the tumour was occupied by a hard cicatrix of the size of a nut.

CASE III.—At the meeting of the Academy of Sciences on May 9, M. Lallemand communicated, for M. Serre, of Alais, the particulars of a case of varicose aneurism at the elbow, which had been successfully treated by the method of M. Pravaz. The clot was soon formed: pulsation did not return when pressure was removed from the brachial artery; and, at a later period, pulsation disappeared in the radial and ulnar arteries. Inflammation, with suppuration, took place in the vicinity of the sac; an eschar was detached from the sac, without producing the least hemorrhage; and cicatrization advanced rapidly.

M. Malgaigne acknowledges that in the cases of MM. Niepce and Serre—true aneurisms—the method appears to have succeeded. Yet the inflammation and suppuration of the sac in the former case, and the suppuration and sloughing in the latter, show that even these cases are not unattended with danger.

CASE IV.—This case is given in the *Revue Méd. Chir.* for October, 1853, and in M. Malgaigne's article. A student had false aneurism at the bend of the arm; it had followed a wound made in venesection. It had been present for three months, and was as large as a hen's egg. On May 21, M. Velpeau carefully injected eight drops of solution of perchloride of iron, procured from M. Burin du Buisson. The consistence of the tumour appeared augmented; but, on removing pressure which had been applied to the brachial artery, pulsation returned. On June 11, ten drops were injected, but without success. The tumour increased in size and became inflamed; and, on June 18, M. Velpeau tied the brachial artery. After a little trouble, produced by ulceration and discharging of clots from the tumour, the patient was discharged cured, on August 4.

CASE V.—On May 19, 1853, M. Lenoir operated for popliteal aneurism, on a man aged 62. He injected seven drops of the solution of perchloride of iron, without producing any effect on the pulsations. On May 31, sixteen drops were injected without results; and, on June 18, twelve drops of M. Dubuisson's solution were used. On June 23, the patient was seized with pain in the affected part attended with febrile symptoms. The pulsations had, since the last injection, become much weaker. On June 24, the popliteal region was hot, tense, and very tender; the pulse was 120; the skin very hot and dry; the patient moaned constantly; the superficial veins of the leg and thigh were more distended than usual. The patient was bled, and poultices and mercurial frictions were applied to the tumour. The symptoms went on increasing; extreme prostration and delirium appeared; and the patient died on June 28.

An examination of the body showed numerous points of ossification on the artery. Blood was effused all round the tumour, and in the neighbourhood of it. The swelling was hard, and was filled with a sanious fluid, which adhered to its walls. The femoral vein, at the level of the tumour, was flattened, and almost impermeable; higher up, it was filled with a sanious fluid, which did not extend into the veins of the pelvis. The pericardium contained some serosity, and presented traces of old pericarditis.

CASE VI.—A patient was admitted into St. Andrew's Hospital, at Bordeaux, with aneurism of the femoral artery. M. Soulé injected four drops of a solution of perchloride of iron. The tumour immediately became hard. Compression was maintained for a quarter of an hour; when it was removed, pulsation immediately returned. Moderate pressure on the artery was kept up; and, five days after the first operation, M. Soulé injected seven drops. On this occasion, severe pain was produced; the patient could not sleep; the tumour inflamed and increased in size; and complete coagulation could not be obtained. Fearing ulceration and hemorrhage, M. Soulé tied the femoral artery about five weeks after the last injection. The patient recovered.

CASE VII.—In a case of traumatic aneurism, of the size of a cherry, seated on the posterior tibial artery, near the internal malleolus, and from which there



had several times been hemorrhage, M. Soulé injected some of the solution, and plugged the wound with some charpie impregnated with it, and applied a compress. In three days, no result having been produced, he opened the tumour, and found that the artery had completely divided. It could not be tied; but pressure, by means of plugs of charpie dipped in Pagliari's solution, was successful.

CASE VIII.—M. Alquié, of Montpellier, relates the following case in the *Revue Thérapeutique du Midi*. M., aged 50, accidentally wounded his ulnar artery, on June 20, while cutting wood. On July 16, there was a pulsating tumour, of the size of a pigeon's egg, on the upper part of the hypothenar eminence: it was covered by a small suppurating wound. On the 20th, five drops of solution of perchloride of iron, with five drops of water, were injected; and a compress dipped in the solution was laid on the tumour. The pulsation diminished, but did not entirely cease. On July 21 and 22, there was severe pain, and the pulsations had become stronger. On the 23d and 24th, erysipelatous redness, accompanied by swelling and tension, extended from the hand to the elbow. The symptoms went on increasing; and, on the 27th, there was an escape of purulent fluid at the seat of the tumour; ulceration was also extended along the forearm. On the 29th, the pulsation in the tumour continuing, and signs of impending rupture appearing, the brachial artery was tied. The pulsation ceased, but reappeared on August 2; and, on the 7th, copious hemorrhage took place from the wound over the aneurism. The ulnar artery and a collateral branch were tied at the lower part of the arm. After this, the pulsations were arrested; the tumour diminished; and the patient was discharged cured on September 18.

CASE IX.—M. Dufour thrice injected a large aneurism of the right carotid artery. Violent inflammation was produced; the tumour sloughed and burst, and the patient died of hemorrhage. (*Annales Cliniques de Montpellier*, April 10, 1853.)

CASE X.—M. Jobert has operated on a patient. Gangrene and death supervened. The particulars of this case have not yet been published; it is merely mentioned by M. Malgaigne.

CASE XI.—M. Malgaigne (*loc. cit.*) relates a case which came under his own care in the Hôpital St. Louis. A workman in a soda-water manufactory, aged 29, was admitted, on July 30, with traumatic aneurism at the bend of the elbow. M. Malgaigne at first applied pressure without effect, and was deterred from applying the ligature by the fear of producing gangrene, especially as the median nerve had been injured. He then determined to inject the sac; taking the precaution of applying pressure *above*, in order that coagulation might not be prevented by the impulse of the blood sent from the heart; and *below*, that the injected matter might not be carried into the smaller ramifications of the vessel. He was obliged to puncture the tumour in several places, before he could arrive at its interior. He injected five drops. Compression being removed, pulsation was not felt in the radial; but in the course of the day it returned. The punctures healed readily; but, on the fourth or fifth day, the patient complained of severe pain in the interior of the sac. In three days it had become very severe, and the sac was much enlarged, and had a blackish spot on its surface. Fearing that rupture might take place, M. Malgaigne applied a ligature with some difficulty, from the inflammatory engorgement of that arm. Pulsation immediately ceased in the tumour and in the radial artery. The patient had erysipelas of the arm, and rheumatism in the knees, which were successfully treated by poultices and veratrine. After some days, finding that the tumour did not diminish, M. Malgaigne opened it, and removed a large coagulum, which contained only blood-corpuscles.

In some remarks made with reference to his case (Case V.) (*Gazette des Hôpitaux*, Oct. 25), M. Lenoir, after describing the instrument of M. Pravaz, and the manner of using it, said that it did not act so exactly as he could desire. A clot of greater or less density would be formed in the canula of the syringe, by the solution of perchloride meeting the blood; and the resistance thereby produced is sometimes so great as to force back the whole of the injec-

TABLE 1.—*The Caloric Intake and Distribution of Calories Ingested by the Children of the Study*

Subject	Weight, Kg.	Age, Yr.	Height, Cm.	Diet	Test Food,* %	Total Calories	Calories, %		
							Protein	Fat	Carbohy- drate
1	22	6	118.4	Basal		1,596	22	36	42
				Cornmeal †	6.9	1,571	21	35	41
2	20	6	115	Cornmeal †	14.2	1,543	20	33	47
				Basal		1,596	22	36	42
3	21	6	116.5	Cornmeal †	6.9	1,571	21	35	41
				Cornmeal †	14.2	1,543	20	33	47
4	25	8	125.1	Basal		1,596	22	36	42
				Cornmeal †	6.9	1,571	21	35	41
5	21	6	117.2	Cornmeal †	11.2	1,543	20	33	47
				Basal		1,555	19	35	46
6	21	6	118	Cornmeal †	3.8	1,839	19	34	47
				Cornmeal †	6.6	1,832	19	33	48
7	41	12	155.6	Basal		1,855	19	35	46
				Cornmeal †	3.8	1,839	19	34	47
7	37	12	152	Cornmeal †	6.6	1,832	19	33	48
				Basal		1,718	20	34	46
7	32	12	152	Cornmeal †	7.1	1,693	20	32	48
				Oatmeal	13.1	1,657	19	31	50
7	38	12	153.4	Oatmeal		1,718	20	34	46
				Basal		1,693	30	32	48
7	38	12	155.2	Cornmeal †	13.6	1,657	19	31	50
				Raw cabbage	2.8	2,922	18	37	45
7	39	12	135	Raw cabbage	6.3	2,893	17	35	47
				Basal		2,815	17	34	49
8	38	13	141	Basal		2,215	19	41	40
				Raw carrot	7.1	2,188	19	40	41
8	38	13	141	Oatmeal	13.1	2,177	20	38	42
				Basal		2,847	16	47	37
9	31	10	144	Raw cabbage	2.8	2,642	17	46	37
				Raw cabbage	6.3	2,496	17	45	38
9	31	10	144	Basal		2,287	19	35	46
				Peeled oranges	1.4	2,209	19	34	47
10	19	7	113.2	Peeled oranges	9.7	2,085	18	33	49
				Basal		2,653	18	37	45
10	19	7	113.2	Peanuts	26.5	3,688	19	48	33
				Peanuts	33.1	1,081	19	52	29
11	17	5	103.4	Basal		2,653	18	37	45
				Raw carrot	2.7	2,407	20	43	37
11	17	5	103.4	Raw carrot	6.5	2,367	20	42	38
				Basal		2,653	18	37	45
12	24	6	123.6	Raw carrot	2.7	2,407	20	43	37
				Raw carrot	6.5	2,367	20	42	38
12	24	6	123.6	Basal		2,367	20	42	38
				Raw carrot	2.6	2,437	18	34	48
12	24	6	123.6	Raw carrot	5.4	2,387	19	35	46
				Basal		2,222	20	40	40
13	22	6	116	Basal		1,583	21	36	43
				Cooked carrot	3.2	1,551	21	35	44
13	22	6	116	Cooked carrot	5.8	1,525	21	35	44
				Basal		1,583	21	36	43
13	22	6	116	Cooked carrot	3.2	1,551	21	35	44
				Cooked carrot	5.8	1,525	21	35	44
14	17	5	96.2	Basal		1,583	21	36	43
				Cooked carrot	3.2	1,551	21	35	44
14	17	5	96.2	Cooked carrot	5.8	1,525	21	35	44
				Basal		1,712	20	40	40
15	19	6	105.2	Basal		1,694	19	38	44
				Applesauce	8.1	1,678	18	35	47
15	19	6	105.2	Applesauce	16.4	1,712	20	40	40
				Basal		1,694	19	38	44
15	19	6	105.2	Applesauce	8.1	1,678	18	35	47
				Applesauce	16.4	1,678	18	35	47
16	23.9	9	130.5	Basal		1,712	20	40	40
				Applesauce	8.1	1,694	19	38	44
16	23.9	9	130.5	Applesauce	16.4	1,678	18	35	47
				Basal		1,712	20	40	40
17	20.7	8	119	Basal		1,694	19	38	44
				Applesauce	8.1	1,678	18	35	47
17	20.7	8	119	Applesauce	16.4	1,678	18	35	47
				Basal		1,712	20	40	40
18	22.3	6	114.4	Basal		1,694	19	38	44
				Applesauce	8.1	1,678	18	35	47
18	22.3	6	114.4	Applesauce	16.4	1,678	18	35	47
				Basal		1,712	20	40	40
19	16	4	108	Basal		1,694	19	38	44
				Roast pork ‡	6.9	2,164	17	32	51
19	16	4	108	Roast pork ‡	12.4	2,314	20	33	47
				Basal		2,461	23	34	43
19	16	4	108	Roast pork ‡	6.9	1,594	17	35	48
				Basal		1,716	21	36	43
19	16	4	108	Roast pork ‡	13.9	1,851	27	36	37
				Basal		1,594	17	35	48
19	16	4	108	Roast pork ‡	6.9	1,716	21	36	43
				Basal		1,851	27	36	37
19	16	4	108	Roast pork ‡	13.9	1,594	17	35	48
				Basal		1,716	21	36	43
19	16	4	108	Roast pork ‡	6.9	1,716	21	36	43
				Basal		1,851	27	36	37
19	16	4	108	Roast pork ‡	13.9	1,594	17	35	48
				Basal		1,716	21	36	43
19	16	4	108	Roast pork ‡	6.9	1,716	21	36	43
				Basal		1,851	27	36	37
19	16	4	108	Roast pork ‡	13.9	1,594	17	35	48
				Basal		1,716	21	36	43
19	16	4	108	Roast pork ‡	6.9	1,716	21	36	43
				Basal		1,851	27	36	37
19	16	4	108	Roast pork ‡	13.9	1,594	17	35	48
				Basal		1,716	21	36	43
19	16	4	108	Roast pork ‡	6.9	1,716	21	36	43
				Basal		1,851	27	36	37
19	16	4	108	Roast pork ‡	13.9	1,594	17	35	48
				Basal		1,716	21	36	43
19	16	4	108	Roast pork ‡	6.9	1,716	21	36	43
				Basal		1,851	27	36	37
19	16	4	108	Roast pork ‡	13.9	1,594	17	35	48
				Basal		1,716	21	36	43
19	16	4	108	Roast pork ‡	6.9	1,716	21	36	43
				Basal		1,851	27	36	37
19	16	4	108	Roast pork ‡	13.9	1,594	17	35	48
				Basal		1,716	21	36	43
19	16	4	108	Roast pork ‡	6.9	1,716	21	36	43
				Basal		1,851	27	36	37
19	16	4	108	Roast pork ‡	13.9	1,594	17	35	48
				Basal		1,716	21	36	43
19	16	4	108	Roast pork ‡	6.9	1,716	21	36	43
				Basal		1,851	27	36	37
19	16	4	108	Roast pork ‡	13.9	1,594	17	35	48
				Basal		1,716	21	36	43
19	16	4	108	Roast pork ‡	6.9	1,716	21	36	43
				Basal		1,851	27	36	37
19	16	4	108	Roast pork ‡	13.9	1,594	17	35	48
				Basal		1,716	21	36	43
19	16	4	108	Roast pork ‡	6.9	1,716	21	36	43
				Basal		1,851	27	36	37
19	16	4	108	Roast pork ‡	13.9	1,594	17	35	48
				Basal		1,716	21	36	43
19	16	4	108	Roast pork ‡	6.9	1,716	21	36	43
				Basal		1,851	27	36	37
19	16	4	108	Roast pork ‡	13.9	1,594	17	35	48
				Basal		1,716	21	36	43
19	16	4	108	Roast pork ‡	6.9	1,716	21	36	43
				Basal		1,851	27	36	37
19	16	4	108	Roast pork ‡	13.9	1,594	17	35	48
				Basal		1,716	21	36	43
19	16	4	108	Roast pork ‡	6.9	1,716	21	36	43
				Basal		1,851	27	36	37
19	16	4	108	Roast pork ‡	13.9	1,594	17	35	48
				Basal		1,716	21	36	43
19	16	4	108	Roast pork ‡	6.9	1,716	21	36	43
				Basal		1,851	27	36	37
19	16	4	108	Roast pork ‡	13.9	1,594	17	35	48
				Basal		1,716	21	36	43
19	16	4	108	Roast pork ‡	6.9	1,716	21	36	43
				Basal		1,851	27	36	37
19	16	4	108	Roast pork ‡	13.9	1,594	17	35	48
				Basal		1,716	21	36	43
19	16	4	108	Roast pork ‡	6.9	1,716	21	36	43
				Basal		1,851	27	36	37
19	16	4	108	Roast pork ‡	13.9	1,594	17	35	48
				Basal		1,716	21	36	43
19	16	4	108	Roast pork ‡	6.9	1,716	21	36	43
				Basal		1,851	27	36	37
19	16	4	108	Roast pork ‡	13.9	1,594	17	35	48
				Basal		1,716	21	36	43
19	16	4	108	Roast pork ‡	6.9	1,716	21	36	43
				Basal		1,851	27	36	37
19	16	4	108	Roast pork ‡	13.9	1,594	17	35	48
				Basal		1,716	21	36	43
19	16	4	108	Roast pork ‡	6.9	1,716	21	36	43
				Basal		1,851	27	36	37
19	16	4	108	Roast pork ‡	13.9	1,594	17	35	48
				Basal		1,716	21	36	43
19	16	4	108	Roast pork ‡	6.9	1,716	21	36	43
				Basal		1,851	27	36	37
19	16	4	108	Roast pork ‡	13.9	1,594	17	35	48
				Basal		1,716	21	36	43
19	16	4	108	Roast pork ‡	6.9	1,716	21	36	43
				Basal		1,851	27	36	37
19	16	4	108	Roast pork ‡	13.9	1,594	17	35	48
				Basal		1,716	21	36	43
19	16	4	108	Roast pork ‡	6.9	1,716	21	36	43
				Basal		1,851	27	36	37
19	16	4	108	Roast pork ‡	13.9	1,594	17	35	48
				Basal		1,716	21	36	43
19	16	4	108	Roast pork ‡	6.9	1,716	21	36	43
				Basal	</				

reverses, and even by deaths, that, at present, I think that no prudent surgeon could expose his patients to the results of such a disastrous mode of treatment."

An animated discussion followed the reading of M. Malgaigne's paper.

M. Moreau believed that the operation ought to be at once and totally discarded.

M. Roux and M. Velpeau agreed that there was little evidence as yet in favour of the operation, but would suggest a more extended course of experiments.

We do not entirely agree with the sweeping condemnation of M. Malgaigne: and would prefer following, and recommending our readers to follow, the more moderate advice of MM. Roux and Velpeau. Yet the operation is one which should not be undertaken without due reflection on its possible dangers, nor until treatment by compression has been tried and found ineffectual. As regards the relative merits of injection and ligature, the former appears at first sight to possess an advantage over the latter, in not involving impediment of the circulation in any collateral branches which may be given off between the aneurism and the seat of ligature.

The principal difficulties in the operation appear to us to be: *first*, to determine the quantity of the fluid which shall, when injected, coagulate the blood, and at the same time set up only a moderate degree of inflammatory reaction in the walls of the aneurismal sac; *second*, to insure the non-removal of the coagulum. The first of these can only be removed by experiment and experience; and, with regard to the second, we would advise any surgeon who performs the operation of injecting an aneurism, to maintain for some time moderate pressure on the artery above the aneurism—sufficient to moderate the flow of blood, yet not so great as to entirely cut off the supply.

*Treatment of Varix.*—The solution of perchloride of iron has also been employed in the treatment of varix. M. Pétrequin has injected the perchloride of iron and manganese in several cases of varicose enlargement of the saphena vein. The effect produced was obliteration of the vein.

In the *Bulletin de Thérapeutique*, for September 15, Dr. Debout refers to six cases of varicose veins operated on by M. Desgranges, of Lyons. In five, there were no remarkable symptoms; but the sixth patient died, after an attack of inflammation of the whole upper third of the leg.

This plan of treatment is worthy of further investigation. In the mean time, the following remarks by Dr. Debout should be borne in mind:—

"It is not enough that the operation succeed, and that the patients leave the hospital cured of the disease on account of which they have been admitted. The cure must be permanent. If, after a longer or shorter interval, the disease reappears, the performance of the operation has been a mere waste of labour and time; and it becomes the duty of the surgeon to abandon the plan, however innocent it may appear to be. . . In the Bicêtre, we have seen a great number of old persons, in whom the obliteration of varices had been in vain attempted. After a greater or shorter lapse of time, they were always reproduced. When the caliber of the vessel is closed at one point, the blood takes another course—distends the small veins. If these anastomoses are not actually developed, so as to reproduce the disease, they at least serve to convey the blood into the varicose vein below the obliterated portion. . . In making these remarks, we only wish to call the attention of surgeons to all the elements of the problem which they attempt to solve."—*Assoc. Med. Journ.* Dec. 9, 1853.

38. *Best Mode of employing Galvano-puncture in Aneurisms and Varicose Veins.* By M. STEINLIN.—Baumgarten and Würtemberg had, by actual experiments, obtained the following results: 1. The negative pole alone gives rise to no coagulation. 2. The two poles used together produce but a very slow, feeble, and incomplete coagulation. 3. The positive pole alone produces coagulation very rapidly, completely, and infallibly. The *Weiner Zeitschrift* publishes some further experiments of M. Steinlin, which he performed in such a manner that the effects of galvano-punctures could be immediately seen, which circum-

stance could not exist in Baumgarten's experiments, as the latter were performed upon living men or animals. M. Steinlin used principally albumen. We have not space for full details of these experiments, but shall merely state that the above propositions were completely verified. M. Steinlin advises a combination of zinc and lead, or tin, to be used in galvano-puncture; or to have the steel needles covered with a layer of zinc. The mode of performing galvano-puncture is as follows: The needles are thrust into the aneurismal tumour, or the varicose vein, and then connected with the positive pole; after which the negative pole is brought in contact with a platinum plate, and placed on the skin in the vicinity of the aneurism. The integument should be moistened with a dilute acid or a saline solution. Instead of the platinum plate, a sponge dipped in a saline solution may be used.—*Lancet*, Feb. 18, 1854.

39. *Treatment of Nævus by Tartar Emetic Plaster.*—Dr. CUMMING read to the Westminster Medical and Surgical Society (Feb. 17, 1854) a paper on this subject. After alluding to the various methods that have been adopted in the treatment of these cases, and to the objections which apply to many of them, he stated that the most satisfactory cures had resulted from the inflammatory and ulcerative processes being spontaneously set up in the tumours, and producing the obliteration of the enlarged vessels by suppuration. He then mentioned Mr. Hodgson's plan of vaccinating the tumours, for the purpose of exciting the adhesive inflammation, but regarded it as a doubtful method of cure, since, though the tumour might be studded over with punctures, only two or three vesicles might arise, and only a partial obliteration ensue. He suggested, therefore, the more effectual plan of treatment by tartar emetic, the method of applying which will best be illustrated by the following case: A child, aged nine months, was brought to him on account of its having lost a large quantity of blood from a vascular nævus on the right temple. The side and central portions of the tumour had been removed by the vaccinating process some time previously. Pressure and cold astringent lotions were first used unsuccessfully. He then determined to use tartar emetic, hoping that, as the eruption produced by this agent resembled that occasioned by the vaccine matter, it might succeed in obliterating the distended vessels. A compound of fifteen grains of tartar emetic mixed with one drachm of galbanum plaster was spread on a piece of thin leather, cut accurately to the size of the tumour, and applied to the nævus. On the third day, inflammatory redness had occurred without causing much pain or irritation. On the seventh and eighth days, the pustules appeared, and, in order to secure as many as possible, the plaster had been pressed gently down over the pustules daily, until it was removed on the ninth day, at which time the eruption had completely involved the diseased structure. The pustules ran through their usual course, and in due time a slough was detached, and the ulcerated surface healed rapidly, the resulting cicatrix being scarcely noticed. Eight similar cases were then successively narrated, in all of which the same simple method of treatment was adopted with like success, the only exception being in one of them where the cure was only partial, in consequence of the tumour having been situated too near the angle of the orbit to permit the free use of the tartar emetic plaster. In all the other cases, the scars which resulted were comparatively slight. He then exhibited a patient on whom he had thus operated for two nævi, one of which being situated on either brow; the cicatrices which had followed, though large, were not unsightly.—*Lancet*, Feb. 25, 1854.

40. *Treatment of Erectile Tumours by a new Method of Ligature.*—In the third volume of the *Mémoires de la Société de Chirurgie* of Paris, there is a paper on the treatment of erectile tumours, by M. RIGAL. After reviewing the different methods hitherto employed in the treatment of these affections, M. Rigal recommends the ligature as the preferable proceeding, employed in a manner peculiar to himself. It consists in using a multiple ligature, the loops of which are tied beneath strong pins, and thus strangulate the tumour without running the risk of allowing the least part of it to escape. The following is the plan described by M. Rigal, in one of his recorded cases: A sewing needle of suffi-

cient strength was carried across the tumour and beneath it, drawing the two ends of a thread through the puncture. A second needle is passed in the same manner below the tumour; their passage thus divided the tumour into three parts of about equal size. Each of the threads was then cut off close to the needles, and thus there were two ligatures free in each of the passages. Then a small and rather strong curved needle was plunged below the upper extremity of the tumour, and was made to pass out on the opposite side. The two extremities of one of the threads were then firmly tied below the needle; the same proceeding was taken at the other end of the tumour. The middle part was perforated by another needle, and one of the upper, and one of the lower threads were tied together beneath it, thus completely strangulating the middle portion of the tumour. The interlacement of the threads, although easily demonstrated by diagrams, is however too complicated for verbal description; but it is sufficient to state, that when the threads are all drawn tightly together, the result was the separation of the erectile tumour from the surrounding parts. The ends of the pins were removed by the cutting pliers. The tumour daily acquired a deeper and deeper brownish tint; it hardened as it became dry. Soon afterwards, the furrow marking the line of strangulation began to ulcerate, pouring out a few drops of well-conditioned pus; and, on the eighth day, the erectile tissue dropped off spontaneously, bringing away the pins and the loops of thread. Although the number of the ligatures and of the pins requires to be varied according to the size and the situation of the tumour, the principles of the operation remain always the same; and no deviation was adopted in any of the operations of M. Rigal, who illustrates his observations by the record of seventeen cases, all of which were successful.

The conclusions arrived at by M. Rigal are the following: namely, that the ligature above described, and which M. Rigal calls the *ligature à chaîne enchevillée*, constitutes a new method for the removal of erectile tumours; that it is applicable not only to pedunculated tumours, but also to morbid productions reposing upon broad bases; that it may be employed upon all the regions of the face and trunk; that it prevents the hemorrhage which accompanies or immediately follows a sanguinary operation, and that which may probably result from the falling of mortified tumours; that its efficacy, its safety, and the little influence which it exercises upon the economy, appear to depend directly upon the energy of the constriction, on the instantaneous isolation, and the immediate death of the parts comprised within the double inclosure of its knots; that the scars which result are firm, movable, and of a remarkable smoothness, and are obtained by the aid of very simple dressings; that the operation is rapidly performed, and that the presence of the pins causes no pain, even in children; that this kind of ligature permits the operator to spare a more or less considerable portion of a movable structure, such as the lips and the eyelids, even when two-thirds of the thickness of these organs have been involved; and that, although it may not be adapted for every case, it will yet be found the most appropriate treatment in a great many instances.—*Assoc. Med. Journ.* Dec. 23, 1853.

41. *A new Mode of Tying Vessels.*—Prof. MATTEI, of Corsica, proposes a new kind of ligature, consisting of two loops, intercrossed, and with the ends in opposite directions. The end of the vessel is placed between these loops, and constricted by pulling at the ends; or, if it is an entire and undetached trunk which has to be tied, one loop is first passed around the vessel in one direction, and then the other around it in a contrary direction, taking care to thread the ends in such a way around the silk forming the first loop, as to secure the necessary intercrossing. If the vessel is of large size, the ends of the loops are made to have an extra turn upon each other. After the vessel is tied, one end of each loop is cut away close to the vessel, and the other end is brought out of the wound, the two remaining ends being disposed as nearly as possible in opposite directions. In this position they are allowed to remain until the vessel is obliterated, and then they are removed by gentle traction at each of the protruding ends, each loop slipping away from the other with perfect readiness, and without in any way disturbing the parts. In some cases, also, M. Mattei

does not clip away any part of the loops, but, attaching a thread to their bends, and bringing these threads out of the wound along with the ends of the loops, he is able to bring away the loops by pulling at the threads attached to them.

The grand advantage of this process is, that, instead of having to remain until the included portion has been slowly eaten through by absorption, the ligature may be removed as soon as the vessel is obstructed; and thus one grand impediment to the process of healing by the first intention is removed. Another advantage is, that the doing away with the ulcerative process lessens the risk of secondary hemorrhage.

M. Mattei has tested the applicability of his plan in amputations of the breast, leg, and arm. He removed the ligatures from the principal vessels on the fourth or fifth day, and from the smaller vessels in the course of the next day, and without any loss of blood. But he has not yet had an opportunity of experimenting upon the femoral or larger vessels.—*Ranking's Abstract*, vol. xviii. from *Revue Méd.-Chirurg.* April, 1853.

42. *Ligature of the Common Iliac for Aneurism of the Gluteal Artery.*—Prof. C. W. F. UNDE relates the particulars of ten cases of gluteal aneurism, in which the gluteal artery was tied three times, the internal iliac six times, and the common iliac once. It appears that the common iliac has been tied about eighteen times. In six of these, the patients recovered; in the others, death happening in periods varying from two hours to eight months:

The patient M. Uhde operated upon was a smith, æt. 26, who had long been afflicted with rheumatism, and who was then suffering from violent pain in the thigh, in consequence of the pressure of the aneurism upon the principal nerves of the limb. The common iliac was tied in the usual manner upon the 7th October, 1852, and death followed on the 11th. On examination, the wound was found in a healthy state, but the areolar tissue surrounding the iliac vessels was infiltrated with pus, and the superjacent peritoneum covered with a thin layer of lymph. The gluteal artery within the pelvis was somewhat dilated. The site of the gluteus medius was occupied by the sac of the aneurism, and there was scarcely a single relic of the muscle remaining. The sac itself was filled with coagulum.—*Ranking's Abstract*, vol. xviii. from *Deutsche Klinik*, No. 8, 1853.

43. *Puncture of Chest by a Needle; Probable Wound of the Heart; Extraction of Needle; Death.*—Dr. W. M. DOBIE relates the following case, which occurred in Prof. Syme's surgical ward:—

On the morning of Thursday, September 9, 1852, an Irish woman, carrying in her arms an infant of four months old, presented herself at the surgical waiting-room. She stated that a needle, sticking in her own dress, had accidentally been forced into the child's chest on the day previous. The child, from the time of the accident was in the greatest distress, crying constantly, and never remaining quiet for a moment. The mother carried the child to a medical man this morning. He made an attempt to extract the needle, but, failing, recommended her to go to the Surgical Hospital. On examining the front of the chest, I found a small wound about an inch below the left nipple, and a little nearer the mesial line. I placed my finger upon it, and felt distinctly a hard point moving up and down under the skin, with each respiratory movement of the chest. Having slightly enlarged the external wound, I succeeded, after a trial or two, in catching the needle under the nail of my left fore-finger, and retaining it opposite the external orifice. Having done this, I waited until the child ceased to cry, when I seized the needle with a pair of Mr. Syme's eyed-forceps, and extracted it by a combined drawing and twisting movement. Two or three drops of yellowish serous fluid oozed from the wound after the removal of the needle. The child instantly ceased to cry, and took the mother's breast, which it had refused prior to the extraction of the needle. The mother was directed to give the child a teaspoonful of castor oil, and to keep him perfectly quiet and moderately warm.

The following measurements were taken:—

44. *Wound of the Abdomen and Intestines terminating favourably.*—On the 25th of September, 1838, Dr. LUCAS CORONEL Y DIAS was called to see a soldier, 23 years of age, who had been wounded shortly before. On examination, there was found, between the anterior and superior iliac spine of the left side and the umbilicus, a wound, directed from above downwards, and from without inwards, traversing the whole thickness of the abdominal wall, and giving outlet to a loop of intestine, partly covered with omentum, the wound bleeding freely, and partially covered by clots. Cold fomentations having been employed, with a view both of stopping the hemorrhage and of allowing the state of the gut to be seen, it was ascertained that the portion of the intestinal loop which corresponded to the anterior and inferior angle of the wound had been divided in a longitudinal direction for the space of about six lines. Dr. Diaz, having had the patient conveyed to the hospital, determined to practise the intestinal suture, not being willing to expose the patient to the infirmity of an artificial anus. The operation was performed in the following manner: The surgeon, seizing with the thumb and index finger of the left hand, the serous coat of the intestine, succeeded in turning the edges of the wound inwards towards the cavity of the intestine, and in bringing them in contact. Five points of suture were then applied, so that, when the wound healed, the threads might fall into the cavity of the intestine, and not into the peritoneum. The taxis was then carefully applied, and the intestine returned into the abdomen. The edges of the abdominal wound were then brought together by four points of interrupted suture and three slips of adhesive plaster. On the following day, there were symptoms of considerable reaction, pulse hard and full, tongue dry and loaded, some pain and tenderness of the abdomen. The patient was bled to six oz.; and eighteen leeches were applied to the abdomen with some relief to the symptoms. On the fifth day after the operation, some puriform matter was passed by the anus. The fever and pain in the abdomen were much diminished. The opium, which had been given up to this time, was ordered to be discontinued. The next morning an emollient injection was given, which produced two stools. The external wound was examined for the first time, and was found covered with healthy pus, and united in all its extent, except at the anterior and inferior angles. On the thirteenth day after the operation, the external wound was almost entirely cicatrized. On the thirtieth day after the operation, the patient left the hospital, and a fortnight afterwards he returned to his regimental duty.

The patient in this case had taken no food for six hours before the time when he was wounded; he had always enjoyed excellent health, and assistance was afforded him very promptly. To these circumstances, Dr. Diaz attributes much of the favourable result.—*Monthly Journ. Med. Sci. from Gaceta de Madrid*, Sept. 1853.

45. *Cerebriform Tumours of Kidney mistaken for Ovarian Tumours.*—Dr. GREENHALGH related to the North London Medical Society (Dec. 14, 1853) the case of a young woman, twenty-one years of age, who, after being struck over the region of the left ovary, presented symptoms of ovaritis which yielded to calomel and opium, leeches, etc. Some time after recovery from the acute symptoms, a swelling about the size of an orange was detected in the iliac fossa, which continued to increase, and appeared, by its pressure, to interfere increasingly with the development of three children borne during the ensuing seven years. It was pronounced by skilled practitioners to be ovarian, and a fit case for removal. After her last confinement she sank from exhaustion, and the tumour was found to be a kidney, the subject of cerebriform disease, weighing twenty-seven pounds.

46. *Ovariectomy.*—Mr. ERICHSEN communicated to the North London Medical Society (Dec. 14, 1853) an account of a case in which he had recently successfully extracted a large ovarian tumour from a lady 65 years of age. The tumour, which was principally solid, and weighed about sixteen pounds, was removed by the long incision. The patient made an excellent recovery, not having had a bad symptom. Mr. Erichsen stated, that so far as the surgical management

of these cases was concerned, he thought the principal points deserving attention were to proportion the length of the incisions to the magnitude of the tumour, to diminish this in size by tapping, after the abdomen had been opened, and, in ligaturing the pedicle, to take care that the peritoneal investment of this root was dissected off along the line of application of the ligature. In this way the risk of peritonitis was lessened very materially. He also advised that the stump of the pedicle should be well drawn out through the lower part of the line of incision, and fixed there by twisting its ligature round the hare-lip pins, by which he recommended this part of the incision to be closed. Mr. Erichsen then proceeded to discuss the general question as to the propriety of extracting ovarian tumours, and, after pointing out the serious and often rapidly fatal character of this disease, the inutility of medical treatment and the dangers of tapping, expressed his opinion, that the operation was a sound and legitimate one in those cases in which the growth had begun seriously to interfere with the comfort of existence and the healthy action of the abdominal organs, the patient wasting and suffering much discomfort from her size, with difficulty of breathing, repeated vomiting, and gastric irritation. In these cases he saw no chance of giving the patient any effectual relief, except by the ablation of the tumour, which statistics showed could be done with success in nearly two cases out of three. He next proceeded to discuss the difficulties of the operation, which were rather of a medical than of a surgical character, consisting in the diagnosis of the existence of such adhesions as would prevent the removal of the growth, or in the difficulty that occasionally occurred of discriminating between ovarian and other kinds of abdominal tumour that did not admit of extirpation.—*Med. Times and Gaz.*

47. *Cancer from Inoculation.*—Mr. RICHARDSON presented to the Medical Society of London (Jan. 14, 1854) the uterus and vagina, and the heart of a patient, whose case he had formerly laid before the Society, as one probably of cancer by inoculation. The husband died some years ago from cancer of the penis, and had had sexual intercourse with the patient long after the occurrence of the gleet discharge which accompanied the cancer, and, until the act, gave him much pain. The patient remained well until upwards of two years after the death of her husband, when she first complained of weakness, anæmia, and a distressing sense of bearing down. Dr. Snow then saw the case with Mr. Richardson, and, on examination, they found a bleeding fungoid mass, breaking up most readily on the introduction of the finger. She at length sank from exhaustion, following the loss of blood, and the repetition of three-grain doses of opium. Mr. Richardson then forwarded the sexual organs to Dr. Edward Smith, for microscopic examination, who reported as follows:—

“The case is one of epithelial cancer. The structures at the entrance to the vagina are free from the disease; but, within three-quarters of an inch of that point, the mucous membrane presents a patch of epithelial cancer, and thence the disease extends to the anterior wall and the structures exterior to the mucous membrane of the urethra. There are also three other small points on the vagina which are not affected, viz. immediately above the patch just mentioned, a rounded space about the centre of the vagina surrounded by the projecting cancerous mass; and, lastly, that part which surrounds the projecting os uteri. At all these points the mucous membrane retains its natural epithelium. The cancerous mass, therefore, occupies nearly the whole of the vagina, and is fully nine lines in thickness, at the back part, near to the centre of the canal, where it also projects nearly half an inch into the cavity above the level of the mucous membrane. It also involves all the tissues except in the patch near to the entrance of the vagina, where the mucous membrane is alone affected. The whole of the lip of the os uteri, and, indeed, the canal of the neck, is ulcerated, and the tissues infiltrated with the cancer. The body of the uterus is enlarged and vascular, but no cancerous growth is found on the walls, or on the mucous membrane. A careful examination of the blood in the capillaries beneath the mucous membrane failed to detect any evidence of the disease within the vessels. I am not quite clear that the mucous membrane of the neck of the bladder, or of the urethra, had been attacked with cancer. It



is quite clear that the malignant disease had seized all the subjacent tissue, and that a rent in the mucous membrane occurs at that spot, but I think it probable that the perforation has resulted from *post-mortem* manipulation. The cellular character of the disease is most evident, and the cells of the small size, which is met with in epithelial cancer, developed in resisting tissues. There are also many of the large, well-defined granular cells said to characterize the colloid forms of the disease."

Mr. Richardson inferred that this was a case of cancer communicated by direct contact, either by or to the woman, and had ascertained from country practitioners that many similar instances had been traced. Mr. Paget and Dr. Druitt had also borne corresponding testimony.

Dr. Ogier Ward recommended the application of nitrate of lead in the proportion of gr. v to ℥j of acidulated water, in cases of hemorrhage, with or without offensive discharges.

Mr. Rogers Harrison, in reference to this case, and also to one which had occurred to Professor Quekett, and was related by Dr. E. Smith, considered that we should be chary in admitting the possibility of such a mode of communication.—*Med. Times and Gaz.* Jan 21, 1854.

48. *Upon the Specific Nature of Blennorrhagia.* By M. PIERRE VIGUIER, Surgeon to the Hôtel Dieu, Lyons.—M. Ricord has affirmed that blennorrhagia, uncomplicated with a primary syphilitic sore, is never virulent. He has even denied all specificity as an inflammation. Consequently, he believes that "women frequently communicate blennorrhagia without having it themselves." According to the author, it would be more correct to say: "Women affected with discharge from the organs of generation, such as fluor albus, menstrual discharge, uterine catarrh, &c., can occasionally give to the male urethritis."

Urethritis and blennorrhagia are two inflammations which should not be confounded; they differ in their cause, progress, and nature. M. Thiry has arranged blennorrhagia under four heads: 1, simple blennorrhagia; 2, virulent blennorrhagia; 3, blennorrhagia produced by a chancre; 4, a specific blennorrhagia, which he does not define.

M. Viguier calls simple inflammation of the canal urethritis. This can be excited by drink, excess of connection, mechanical irritation. Blennorrhagia he calls a specific inflammation, dependent upon the contact of pus, possessing specific properties, but differing from the pus of syphilis. This form consequently differs from blennorrhagia virulenta, or that arising from the presence of a syphilitic urethral chancre.

Urethritis is attended by purulent secretion, ardor urinæ, and oedema of the prepuce; but, in the course of a few days, the active stage being passed, it shows a natural tendency to resolution. Its extinction is complete, and it leaves no trace of its presence in the canal. There is no necessity for cubebs, copaiba, &c. Great drinkers of beer are stated to afford most instances of this affection, and the disease rapidly disappears by purging and abstinence from the exciting fluid. There is no chronic stage. When Swediaur wished to prove, by injections of ammonia into his own urethra, that he could produce blennorrhagia at will, he failed, for the only affection resulting was urethritis.

After coitus with an infected female, four, six, or eight days generally elapse before the appearance of the discharge of blennorrhagia. There is first unpleasant pruritus; then some obstacle to the flow of urine; lastly, discharge. These last, namely, the obstacle to the flow of urine and the discharge, increase to the tenth day, when they have reached their summum of intensity; the pus is then yellow, or yellowish-green, abundant, and tinged with blood. Erection is painful, and disturbs the sleep; the canal is hard, and affected by inflammation through its entire thickness; there is weight in the perineum, and often propagation of the inflammation to the bladder, to the vas deferens, and to the epididymis. To this acute stage succeeds a second, called by the author "curative," which alone must be selected for the administration of anti-blennorrhagic medicines, if it be desired to gain from them all the good effects of which they are capable. When administered at an earlier period, their action ceases with the diminution, but by no means with the disappearance of the

acuter symptoms. There is not in blennorrhagia a tendency to spontaneous cure as in urethritis; the discharge may become permanent, losing, however, its yellow colour, and becoming almost limpid; excess in drinking or coitus causes its rapid reappearance.

Blennorrhagia is always produced by contagion; blennorrhagic pus must be deposited upon the mucous membrane of the urethra; but certain conditions are required to favour the development of the disease—the quantity of pus, its prolonged action, irritation of the urethral mucous lining, &c. An individual having frequent acts of connection with a blennorrhagic female would be sure to contract the disease, when another individual more careful would escape.

During the chronic stage of the disease, there is no danger from fresh infection; but the original disease may acquire increase in intensity.

The author concludes by general remarks in opposition to the statement by M. Ricord, that blennorrhagia may be produced by common, and not specific causes.—*Medical Times and Gazette*, Jan. 7, 1854, from *Gazette Hebdom.* Dec. 1853.

49. *Polypus of Epiglottis; Spontaneous Separation.*—The following curious case, occurring in Prof. Syme's surgical ward, is related by Dr. DOBIE:—

Christina P., æt. 18, admitted September 30, 1852. Patient states that, about ten days before admission, she injured her throat by swallowing a piece of hard crust; after this, she felt some difficulty and pain in deglutition. About a week ago, she experienced a peculiar sensation in the back of the throat, which led her to believe there was some tumour growing there.

On admission, a distinct tumour can be seen and felt, arising near the base, and on the right edge of the epiglottis. The tumour appears to be pediculated, of the size of a small cherry, and the surface is somewhat irregular and marked with yellowish patches of ulceration. To the touch, its consistence seems to be similar to that of a healthy salivary gland.

October 2, 10 A. M. The tumour was to-day very distinctly seen and felt. She complains that it gives her breath an offensive odour, which is very appreciable. A little after mid-day, Mr. Syme examined the throat, and found that the tumour had disappeared, and no doubt had been swallowed.

The point from which the tumour has become detached can be readily seen, and was touched with the sulphate of copper. She was dismissed quite well a day or two afterwards.—*Monthly Journ. Med. Sci.* Oct. 1853.

## OPHTHALMOLOGY.

50. *On Change of Sight as Premonitory of Hard Cataract.*—It occasionally happens that persons who were presbyopic, and have used convex glasses, as they advance in years recover natural vision, or even become near-sighted. Mr. W. WHITE COOPER has recently had the opportunity of studying four cases of this description; and has quite satisfied himself that, in them at least, the change from presbyopic to myopic sight was premonitory of hard cataract.

"I have observed," he says, "that myopic persons, who become affected with cataract, increase the power of their glasses to the very highest numbers, even to No. 14. It is often considered that the need of higher and higher glasses, under these circumstances, is a delusion, and that the mere fact of the vision becoming more and more imperfect, leads the patients to seek increased assistance in stronger glasses; yet, as the highest concave glasses diminish objects to almost microscopic minuteness, it was difficult to believe that they really afforded assistance. Observation has, however, led me to believe that the assistance was not imaginary; and the reason is probably this. In all cases of hard lenticular cataract, the crystalline lens becomes closer and denser in structure, and generally rather flattened in shape; but the flattening is in some cases less in proportion than the increase of density. By this increase of density, the

refractive power is altered; and consequently the focal distance is shortened; so that a myopic eye, which formerly derived sufficient assistance from lenses Nos. 6 or 8, needs Nos. 12 or 14 for reading, or seeing moderately distant objects.

"To an analogous change I refer many of those singular cases in which old persons lay aside their convex presbyopic glasses, being able to do without them, or find themselves under the necessity of using concave or myopic glasses. The increase in density may be sufficient to counteract the changes which had previously diminished the refractive power, and to restore to the eye its natural focal distance; or it may go a little further, and cause the image to be formed in front of the retina, as in near-sighted persons. Such a change in the density is not necessarily attended with so much diminution of the transparency of the lens as to materially interfere with vision, though I believe the sight is always a little impaired, which the patient properly sets down to the account of old age; but, in many cases, the change goes on; the lens becomes shrunken and amber-coloured; and the patient is sooner or later pronounced to have hard cataract.

"The characteristics of the cases which I have seen have been these. A person, about the middle period of life, has taken to glasses, which have been increased in power as years rolled on. He has numbered perhaps seventy summers, when he finds the high powers less agreeable than the lower, which are resumed; but, after a time, they too, strain the eyes. Perhaps glasses are altogether laid aside, and the fortunate individual receives the congratulations of his friends on his renewed juvenility. In some cases, the sight is far from clear, and objects are held near the eyes to be discerned; accidentally, perhaps, he looks through a concave glass of low power, and is agreeably surprised at finding his sight improved. As these symptoms occur in advanced life, the persons may die before other phenomena present themselves, and the true nature of the case may never be discovered. But if the parties live, the sight, sooner or later, becomes little by little obscured, and the characteristic symptoms of hard lenticular cataract are established. I have often been struck with the slow progress of some of these cataracts. During the last ten years I have, from time to time, examined the eyes of a clergyman who consulted me in 1843, for slight imperfection of vision. In his right lens two small striæ were then visible; in the left lens there were three; the nature of the case was explained to him; he has taken great care of his eyes, and although there is now a general haze in both lenses, he has sufficiently useful vision to perform his clerical duties. Another patient, a physician, has had cataract fully formed in the left eye for six years, and incipient cataract has existed in the right for nearly the same time; but it has been so stationary that he still reads and writes.

"The formation of cataract, then, may be so gradual that it may have made considerable progress before the patient will admit that his sight is much impaired: I have known patients almost angrily protest that their sight was good—not quite so sharp as it used to be, but still very good—when decided cataracts were plainly visible. The fear of the proposition of an operation may lead them to make the best of matters, but there is much self-deception in many cases.

"In the four last cases of sight changed from presbyopia to myopia, which have fallen under my observation, careful inspection, at intervals of two or three months, has traced the change of structure from the first faint indications to the unmistakable characteristics of hard, lenticular cataract; and, as a general rule, such cases should be carefully watched, for it commonly happens that persons who appear to have recovered their pristine sight in the manner described, are disposed to take liberties with it, and to use their eyes more than is prudent. They should be warned against this; for though art can do little directly to arrest the progress of cataract, congestive action of the eyes may be

<sup>1</sup> Since this paper was written, I have conversed with a distinguished Viennese ophthalmologist, Dr. Meyer, and find that he had arrived at the same conclusions as myself, as to the nature of the cases in question.

prevented by the patient abstaining from over exertion of those organs, especially by artificial light; and he ought to be careful so to arrange his position, when reading or writing, that the object on which he is engaged should be well illuminated, but the eyes kept in the shade, and protected from the injurious stimulus of heat and glare. He should always use the blackest ink, write a bold hand, and, above all, avoid reading small and indistinct type."—*Assoc. Med. Journ.* Nov. 11, 1853.

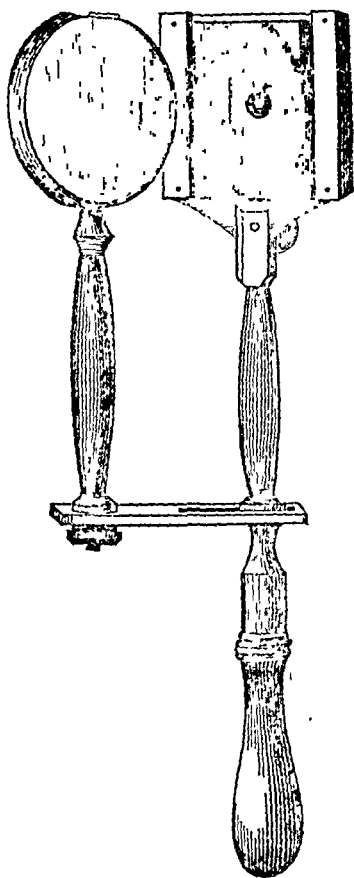
51. *Coccius's Ophthalmoscope*.—Mr. T. SPENCER WELLS describes (*Med. Times and Gaz.* Sept. 10, 1853) an ophthalmoscope recently invented by Coccius, of Leipsic.

"This instrument consists, as may be seen by the accompanying wood-cut, of a perforated mirror and a lens. The rays of light from a lamp are concentrated by the lens, and thrown on the mirror. This is held before the eye to be examined, and the rays are thrown through the pupil on to the retina. The unabsorbed rays return in the same direction, and are received by the eye of the observer, which is behind the mirror, at the spot where it is perforated.

"In a healthy eye, the part behind the pupil is absolutely dark. Even when the lens and vitreous humour are clear and transparent, no ordinary examination, even when the pupil is dilated, can afford any information as to the appearance of the retina. Without some artificial assistance, we cannot illuminate the retina and also see the illuminated part. The rays of light return from the retina in the same direction as they were thrown on to it, so that we cannot bring our eyes into the direction of the rays of light returning from the retina without at the same time cutting off the supply of those rays. But, by the aid of this instrument of Coccius, the rays are reflected at an angle upon the mirror, are then conveyed to a focus on the retina by the media of the eye, and the unabsorbed rays, on leaving the eye, return to the mirror whence they came, and are also received by the eye of the observer.

"When the instrument is to be used, the pupil is dilated by atropia, if not naturally dilated. The patient is seated in a dark room, near the corner of a table, on which a bright lamp is placed at the level of the eye. The surgeon sits before the patient, and screens the face of the latter by an upright shade, so that the eye is the only illuminated part. Holding the mirror opposite the eye, he then adapts the lens in such a manner that a bright concentrated light is seen to fall on the pupil. Then he applies his own eye to the back of the mirror. The instrument is held at different distances from the eye until a clear view is obtained, and then the patient, by moving his eye in different directions, exposes the different parts of the retina to view. This appears rather difficult at first, but a very little practice enables one to find the proper position of the instrument. When the retina is not clearly seen, although the pupil is well illuminated, a concave glass is interposed between the mirror and the observed eye, by the hand not employed in holding the instrument.

"Examination of the retina in this manner is very interesting. Bloodvessels are first distinctly seen ramifying upon it, and, by tracing them from the smaller



branches to the larger roots, we arrive at the point where the optic nerve enters. This differs in appearance from the rest of the background of the eye, as it is not covered by pigment, or a network of vessels, but a sort of transverse section of the nerve here lies open to view, with a few fine vessels passing through it. The arteries and veins of the retina enter and leave near the inner part. Sometimes a portion of the vessels may be seen concealed in the substance of the nerve itself, showing that this substance is transparent during life. The two orders of vessels are distinguishable from each other, as the blood is of a brighter colour in the arteries, and the walls of the latter and their first subdivisions are thicker than those of the veins. Pulsation cannot be distinctly recognized, so far as I have been able to discern, though some observers fancy they can see it. The first divisions of the vessels border the inner side of the optic nerve, and then extend all over the field of the retina. The appearance of the red vessels on the illuminated base is really beautiful. Helmholtz remarks that, close to the inner side of the nerve, he has always remarked a small semilunar strip of shadow, which appears to be from a fold of the retina. This appearance is universal, and is doubtless produced by the plica semilunaris. In most parts of the eye the base appears of a yellowish-red, of a brighter red around the optic nerve, and darker the further we pass from it; not of an equal colour, but as if with small darker patches. The point of direct vision (macula lutea, or fovea of Soemmering) has a peculiar appearance. The eye is directed exactly upon the ray of light, and the retina is seen at that spot to be darker, grayish-yellow, without admixture of red; and no traces of capillary vessels can be seen on it. It is difficult to make this out without practice, because the reflection from the cornea is apt to destroy it; while this reflection does not interfere when the eye is turned to either side for the examination of the lateral portions of the retina.

"As an auxiliary in diagnosis, the ophthalmoscope must prove very valuable, as anything opaque before the retina must mask its vessels. Cloudiness of the vitreous humour, according to its degree, will obscure the view of the vessels of the retina. Opacity of the lens, or of its capsule, would, of course, act in the same manner.

"But it is in assisting the study of the pathology of amaurosis that the chief utility of the instrument will be found."

Mr. Wells further states that "the instrument of Helmholtz is preferable for examining the refracting media, and it possesses the great advantage that it may be used with an undilated pupil without producing much contraction; while the intense light from Kotzius's instrument requires full dilatation, or the pupil becomes closely contracted. But, for the grand object of examining the condition of the retina itself, this latter instrument is very far superior to any other that I have seen."

The intense light from this instrument may, in some cases, we fear, prove injurious to the retina, and we must therefore urge great caution in its use.

52. *Mydriasis and nearly complete Blindness of a month's duration, cured by Expulsion of Intestinal Worms.* By M. FALOT.—That extreme dilatation or immobility of the pupil, and in consequence blindness, complete or partial, is not always dependent on an amaurotic affection, is proved by the following case:—

B—, aged 7, has never suffered from ill health since his first dentition, which was reported to have been very severe; he is of a lymphatic temperament, pale and haggard, his appetite irregular, and he is subject to diarrhoea.

In consequence of indigestion, he was seized, during the night of the 12th of September, 1852, with subsultus tendinum, stiffness of the extremities, alternate tremors of one or several parts of the body, grinding of the teeth, slight delirium. Eight leeches to the mastoid process, assafoetida injection, antispasmodic draught, and poultices to the lower extremities.

The next day, early in the morning, his parents sent for me, as their son had become blind. The face, which was yesterday pale, had now become livid, especially the lips; frontal headache; pulse small and weak; body bathed in sweat; tongue white and moist; belly tympanitic; immobility and enormous

irregular dilatation of both pupils, which are as large as the cornea, so that the ciliary processes of the left eye can be plainly seen. The child has recovered consciousness, and complains that he can no longer see objects distinctly. Under the impression that this affection of the sight was caused by the preceding convulsive attack, I directed the renewed application of leeches, two laxative injections, and sinapisms.

In the evening there was slight epistaxis; the cerebral symptoms have disappeared; weakness; slight fever; countenance pale and lead coloured; some mucous vomiting, and nearly complete blindness. Blister to left arm. Sinapisms and injections.

14th. Passed a sleepless night; the pupils are still much dilated; the child (a very intelligent boy) is very uneasy with regard to his sight; no stool since his illness; belly tense, and frequent muscular tremors. Blister to nape; oily injections; mustard foot-bath, and a decoction of helminthocorton (*Corsican moss*); forty-five grammes to one hundred grammes of milk.

15th. Pretty quiet night; three yellow and fetid stools; vision in the same state. The patient and his parents inconsolable.

16th, 17th, 18th. Same condition. Revulsives, irritating frictions, ammoniacal vapour, cauterization with nitrate of silver to various points of the circumference of both corneæ alternately.

20th. Not knowing whether I had to deal with a commencing amaurosis, or mydriasis, symptomatic of a gastric or verminous condition, I made a pinhole in a piece of card, and having put the small opening before the eyes of the patient, he could distinguish large objects with more distinctness. Same treatment to be continued.

23d. I persisted for some days with the cauterization around the cornea. Revulsives, acetic lotions, and vermifuge laxatives for the constipation, which was not usual with the child, as he was naturally very free.

28th. He vomited the food taken in the evening, and expelled two lumbrici by the mouth.

29th. Ten hours after, having taken four doses, of four grains each, of calomel, he expelled, in three motions, twenty-eight other worms by the anus.

At the end of six days he again expelled, by the anus, four of these entozoa, always by means of calomel. The dilatation insensibly diminished, and in a month after the sight had returned to its usual state.—*Dublin Medical Press*, Dec. 28, 1853, from *Revue Thérapeutique du Midi*.

53. *Uræmic Blindness and Dyspnœa*. By W. H. WALSHE, M. D.—Mr. —, aged twenty-nine, widower, leading a steady and quiet life, has generally enjoyed good health. Ten years ago, he had a peculiar contraction of the right leg, the tendons feeling stiff in the ham. Three years ago, he was ill for a fortnight with sore throat. He has now been ill for upwards of two months. A fortnight ago, boils commenced to form about his body; one, above the left orbit, was followed by great pain on the spot. All of these boils got well; he felt generally ill and depressed, but was improving, when, ten days ago, he found he could not see as usual; the left eye being decidedly the worse of the two. He had no cephalalgia, nor swelling of the face.

Nov. 12. *Present State*. (a) He looks depressed, somewhat stupid; has slept badly for last two nights, without bad dreams; spirits low; temper of late rather morose; inclined to talk to himself. (b) The skin is pale and sallow; he does not perspire; there is no skin affection of any kind; no distinct swelling about eyelids; he says they are stiff; no swelling of ankles. (c) The legs are weak, about equally so; if any difference, the left is the worse (*vide k*). (d) Tongue tolerably clean; bowels open from medicine; anorexia. (e) Resonance is good under clavicles; no chest symptoms. (f) Heart's action is rather too extensively felt; first sound at base and apex rather too clear and full; no murmur at heart (pulse 76); strong venous hum in neck. (g) No swollen lymphatic glands. (h) Urinary organs patient declares to be in good order; three years ago, however, he had hæmaturia, for which he knew no cause. (k) Moderate headache at vertex; no vertigo; no tinnitus; no peculiar sensations of any kind in head; intellect perfectly clear; some stiffness in joints of

upper extremities, shoulders most, right and left the same; he squeezes awkwardly with left hand, but, about as forcibly as with right; no deviation of tongue; articulation quite distinct; no peculiar sensations in limbs. (l) No convulsive movements anywhere. (m) Pupils medium sized, round; contract immediately and gently well under light (merely that of the room); then expand a little; the action is not distinctly different on the two sides; no opacity in either eye; no amaurotic look; no photopsia; no muscæ; and no spontaneous pain in the eyeballs; no photophobia, but is pained, he thinks, by continuing the effort to see; he cannot distinguish moderate-sized objects at opposite side of the street; cannot read small print at all; sees better in morning when he gets up, and with strong light; has never had diplopia.

Here, then, was an anæmic person, suffering from boils (which were, as is well known, epidemic at the time), but caring neither for his anæmia, nor his boils, nor the general disturbance of health accompanying these, but solely anxious about the sudden and increasing failure of his sight.

Were the eyes themselves diseased? No opacity could be discovered in either; membranes and humours appeared perfectly transparent. That the cornea, chambers, lens, and its capsule, were free from any change sufficient to explain the symptoms, was, in fact, unquestionable. Again, disease of the retina, producing blindness, if acute, would have been attended with local symptoms, weight and fulness in the eyeball, with throbbing pain, photopsia, change of colour of the irides, &c., and with fever—conditions all of them wanting here. Chronic retinitis is attended with morbid sensibility to light, which our patient did not complain of. It is so infinitely unlikely that tumours connected with the deep-seated tissues of the eye should form simultaneously in both organs, that the idea of their existence here might, almost without examining the globes themselves, be rejected. Disease of the optic nerves, or their sheaths, enlarges the pupil, paralyzes the iris, and very, very rarely attacks both sides simultaneously; it was, therefore, not the cause of the blindness here.

Nor could the case be supposed one of idiopathic amaurosis. The eyes had not the amaurotic look nor expression; there was no lustre of their surface, no rolling or unsteady movements of the eyeballs, and none of the peculiar vacant gaze of that affection. This patient, on the contrary, directing the axes of the eyes appropriately, *looked as if he could see well.*

The least reflection on the condition of the patient's motor and intellectual faculties satisfies us that none of the ordinary affections of the brain could have existed here. Neither meningitis, simple or tuberculous, nor hemorrhage, produce blindness of the type before us; and, though both acute and chronic softening do actually cause impairment of vision on one, or even on both sides, blindness never constitutes the prominent symptom it did here; besides, all other evidences of softening were deficient.

But it was not so easy to exclude tumour of the encephalon. For not only has blindness, more or less complete, been a frequent symptom in cases of intra-cranial morbid growth, but actually, next to cephalalgia, their most, or nearly their most, frequent symptom. This is true of tumours of the cerebrum, cerebellum, pons, and pituitary gland; a circumstance showing, by the by, the vainness of the attempts to diagnosticate the seat of a cerebral tumour, solely through the perversion of special senses. It is true that there was no cephalalgia of note in this instance, but cephalalgia may be absent from first to last, even in protracted cases; and we might have been at the commencing period of the formation, at which period, there is every reason to believe, if not to be absolutely certain, the head is often free from pain. Intra-cranial tumour was, therefore, by possibility the cause of the failure of vision in this patient.

But, again, there are cases on record, tending to show that injuries to the supra-orbital nerve may produce obscurity of vision, nay, complete blindness. It is true that some observers hold that, in all such alleged cases, there has in point of fact been concussion of, or other injury to, the eyeball itself; but the weight of the evidence seems to me decidedly in favour of injury to the branch of the fifth nerve named sufficing to impair vision. Now the patient had had no traumatic mischief done to his eyebrows, it is certain; but he had had a boil

there, the source of much pain and irritation; and it seemed an admissible hypothesis that the local inflammation might have acted the part of a wound in the spot. It is alleged that the nerve of one side only being implicated, the eye of the other has suffered by sympathy.

It was certain the patient had not been taking any of the drugs—belladonna, aconite, stramonium, &c.—which injure sight.<sup>1</sup> Besides, the pupils were not dilated.

Œmæmic or blood diseases (I use the adjective as more euphonious) are many of them, more or less constantly, attended with perverted vision. Now our patient was anæmic to a high degree; but I could not admit this to be the cause of his blindness; for, though impairment and perversion of sight often attend this state, they never, as far as I know, do so to the extent observed here; they never constitute the prominent enduring symptoms of the state. But anæmia might here be fairly taxed with increasing the blindness, though *essentially* otherwise caused.

But however plausible it might have appeared to refer the imperfect sight either to encephalic tumour, or to implication of the frontal nerve, examination of the urine, a few days later, furnished a much more satisfactory clue to the symptom. The fluid was highly albuminous. We now ascertained from relatives that the daily amount was small (a fact previously denied by the patient). A few days later, the eyelids were distinctly, though very slightly, œdematous; the ankles remained free from dropsy throughout. The most active measures failed to produce any secretion from the skin, which continued to the last day dry and harsh.

Between this period and that of the patient's death, on the 29th of November, one or two circumstances occurred worthy of note. The hydrochloric acid test succeeded strikingly; the expired air gave thick opaque fumes; but in this instance, as in many we have seen in the wards together, the breath was of strongly urinous odour—a state quite as significant of uræmia, as an affirmative result by Frerichs's test. For several days before his decease, the patient had *uræmic dyspnœa*, as I would call it—a dyspnœa evidently depending on the morbid state of the blood; for there was no pulmonary nor cardiac affection to explain it; the percussion sound was excellent everywhere; there was no rhonchus, no serious alteration of the respiration sound, and no cardiac disease. The pulse-respiration ratio averaged, during this time, 3:1, both pulse and respiration being, absolutely speaking, very frequent, namely, 120 and 40. But there was an amount of breathing distress materially greater than attends a respiration of forty per minute; to this the poisoned blood was the apparent clue.

Now, remarkably enough, this patient remained, almost to the last moment, free from the more ordinary effects of uræmic poisoning. The brain and cord gave no sign of suffering; his intellect continued clear; there was neither delirium nor sopor; and convulsions did not occur. This dissection of the effects of the kind of poisoning in question is not uncommon; the brain and vision may alone be affected; or the vision, the functions of the spinal cord, and those of the brain may suffer simultaneously.—*Assoc. Med. Journ.* Nov. 13, 1853.

54. *Effusion of Blood into the Vitreous Chamber of the Eye.*—Mr. JAMES DIXON records (*Lancet*, Jan. 28, 1854) four cases of this rare affection.

CASE I.—William L—, a clerk, aged 16, of fair complexion, and rather slender make, came to me, Nov. 19, 1844, complaining of almost total blindness of the left eye, which, he said, had come on suddenly about two months previously. Vision was limited to the perception of well-lighted surfaces; a sheet of paper appeared "like a whitish cloud;" dark objects, even of large size, were not seen at all. The iris of the right eye, the sight of which was perfect, was light blue; that of the left had a greenish tint, the pupil being rather sluggish in its movements, but still influenced by exposure to light. Beyond these slight changes in the iris, I could detect nothing abnormal about the eye until

<sup>1</sup> Perry, U. C. H., Males, vol. ix. p. 105, admitted January 6, 1853, after taking half an ounce of salts of lemon, had considerable deficiency of sight, when seen eighteen hours later.



I dilated the pupil with atropine, and then, on looking attentively into the space beyond, I noticed an indistinct reddish appearance at the lower part of the vitreous chamber. By concentrating light on this spot with a convex glass of one inch focus, a clot of florid blood was distinctly seen, lying just beneath the crystalline lens. I had this patient under observation about two months, during which time no perceptible change took place either in the size of the clot or the brightness of its colour; and three months later, I learned that the sight of the eye was still unimproved. I could not ascertain that the patient's health had been noticeably out of order at the time the loss of vision occurred, nor could he recollect having suffered pain either in the head or eye.

CASE II.—Abraham H—, aged 20, came to me from the country, on the 3d of June, 1847, in consequence of having discovered, seven weeks previously, that he could not discern objects with the left eye, mere perception of direct light being retained. He had suffered from iritis in the right eye more than a year ago, and there were several points of old adhesion between the iris and capsule, but the sight was still pretty good. It was by closing this eye that he accidentally discovered the loss of sight in the other. He had had no blow, nor could he remember having suffered any pain in the left eye, the appearance of which was perfectly healthy, and the iris active. I dilated the pupil with atropine, and then found that nearly all the back part of the vitreous chamber was occupied by a bright red clot, the greater portion of which was fixed, but the rest loose, and floating to and fro in the vitreous humour. As the patient returned to the country after a second visit, I had no opportunity of watching the progress of the case.

CASE III.—Mary S—, aged 35, a sickly, anxious-looking woman, applied to me in May, 1845, on account of almost total blindness of the right eye. The only morbid appearance I detected on her first visit was a sluggishness in the movements of the iris, the pupil being permanently more dilated than in the left eye. A very indistinct reddish reflection from the vitreous chamber induced me to apply atropine, and as soon as the pupil was freely dilated, a clot of blood was seen lying at the bottom of the eye, part being fixed, and part floating loosely in the vitreous body, as the eye was turned from side to side. Three years previously the patient had suffered much mental distress from the death of her husband and three children in rapid succession. About the same time she was troubled with a cough, which increased in violence, and was sometimes attended with spitting of blood. In the spring of 1844 the sight of the right eye began to grow dim, and in the course of six months it was reduced to mere perception of light. Frequent headache, and an appearance of black spots before the eye, accompanied the failure of sight.

CASE IV.—Mrs. C—, aged 51, consulted me Oct. 9, 1849. About the beginning of August she had been attacked with intense neuralgia throughout the fifth nerve on the right side, which, for three nights, almost deprived her of sleep. Mustard poultices repeatedly applied to the side of the face relieved the pain considerably. After this attack she used to feel languid, and by the evening was sometimes quite fatigued; but in other respects she seemed pretty well, her appetite being good, and bowels regular. Towards the end of August she used to notice, when in bed, bright colours passing in continuous streams before the right eye; by day she saw well with it, and could even read. Two weeks later, on closing the left eye, she found she could only see parts of objects with the right. At the time of her visit to me, her general health was pretty good; she no longer saw colours passing before the right eye, but there was occasionally a dull aching pain in the globe. The left eye exhibited nothing remarkable except that the iris was prominent, and almost in contact with the cornea. The pupil acted, but not very briskly, and the sight was good both for near and distant objects.

In the right eye the sclerotic had a dirty yellowish, or faint olive tint, a little lighter than that seen in the first stage of staining with nitrate of silver. Thinking that the stain might be the remains of ecchymosis, I asked whether there had been any appearance of this eye being "blood-shot;" but she said, "No." The pupil was rather dilated, and unaffected by light. She saw pretty well all objects placed below the level of the eye—even the type on a printed

page was recognized as black lines—and by throwing the head well back she could see a name across the street as a white streak on a black ground. On looking at a person's face on a level with hers, she only saw the chin, all the other features being hidden by a dark cloud which seemed always hanging over her head.<sup>1</sup>

In a certain light I noticed a dull red glow from the bottom of the eye. I fully dilated the pupil with atropine, and then a clot of blood became distinctly visible behind the lens, at the bottom of the vitreous chamber. The mass was hemispherical, and its summit, which rose as high as the middle of the pupil, had a slightly grayish tint, while its anterior slope was of a decided red. It appeared to consist of an effusion of blood beneath the retina, which being thereby raised from its natural position, formed a thin grayish investment to the smooth, rounded surface of the clot.

55. *Cancerous Tumour of Conjunctiva; Extirpation of Eye.*—Dr. W. M. DOBIE relates the following case which occurred in the surgical ward of the Royal Infirmary, under the care of Prof. Syme:—

John D., æt. 50, Galashiels, admitted November 3, 1852, on account of a tumour, about the size of a small bean, growing from the conjunctival surface of his left eye, midway between the external canthus and the junction of the sclerotic with the cornea. The tumour is of a bright red colour, and has a smooth, glistening, lobulated surface. He states that he first observed the tumour about twelve months ago; it was then about the size of a small pea; it had increased nearly to the size it is at present at the end of two months. He then applied to Professor Syme, who expressed his conviction that the nature of the tumour was malignant, and that, in the end, the removal of the eyeball would be requisite. Mr. Syme, however, cut off the tumour, thinking it better, in the meantime, to try the effect of removal before resorting to the more severe procedure. He returned in six weeks, the tumour having again nearly attained the size of a large pea. Caustic was applied by the resident clerk. Six weeks after this, the tumour was removed by Dr. M'Dougall, of Galashiels; and again, in six weeks, this operation was performed for the fourth time by Mr. Walker, who recommended that caustic should be occasionally applied.

Three weeks before his admission, Mr. Mackenzie, of Glasgow, saw the patient, and advised the extirpation of the eyeball. At present, he suffers a good deal of pain in the eye, and the vision of both eyes is considerably affected.

November 10. Mr. Syme removed the eye with a pair of curved scissors. A single point of suture was applied at the external canthus. The cavity of the orbit was stuffed with lint, which at once restrained the hemorrhage. A pad of wet lint, kept in position by a turn of bandage, was applied over the eyelids.

15th. Suppuration being now fully established, the stuffing of lint was removed—this was done with facility. He has no pain in the wound, and the sight of his right eye is much improved.

22d. Discharged quite well.—*Monthly Journ. Med. Sci.* Oct. 1853.

[It is premature, we conceive, to pronounce this patient to be cured. Time must determine this. A representation of the tumour before removal, and of its microscopic appearance is given.—Ed.]

56. *Pathological Remarks on the kind of Palpebral Tumour, usually called in England Tarsal Tumour.*—Mr. HAYNES WALTON, in a paper read before the Royal Medical and Chirurgical Society (Jan. 24, 1854), after pointing out the very obscure manner in which the subject of tumours of the ocular appendages is treated by writers, gave a description of the external characteristics of such tumours, and proceeded to describe the intimate structure of one that he had removed from the living body. It consisted, externally, of a dense fibrous cyst, continuous with the fibrous tissue of the lid; within this was a layer of fibro-plastic matter, soft, pink, and very vascular, composed of fibro-plastic cells, with very little intercellular matter; within this, a thin pellucid cyst, con-

<sup>1</sup> This affords an illustration of the well-known fact that the lower part of an object is perceived by the upper part of the retina, and *vice versa*.

taining a puriform fluid; with epithelial cells, loaded with oil, and in the centre a perfectly round pellet of sebaceous matter. In conclusion, the author suggests the following order of development: 1. The formation within a Meibomian follicle of a pellet of hard sebaceous matter. 2. The secretion of a more copious epithelium and fluid matter around. 3. The addition of fibro-plastic matter around the obstructed gland, follicle distending the loculus of fibrous membrane into a cyst. This, with frequent dissections of other tumours, were illustrated by accurate drawings. The author suggested the name of Meibomian tumour to be applied. In a postscript to his paper, Mr. Walton recommends, that when such tumours take an outward course, it is better to open them, squeeze out the contents, and extract the cyst. If the incision be made horizontally, there is no danger of a scar.—*Med. Times and Gaz.* Feb. 4, 1854.

### MIDWIFERY.

57. *An Account of Seventeen Cases of Parturition in which Chloroform was inhaled with pernicious effects.*—Dr. ROBERT LEE read before the Royal Medical and Chirurgical Society an account of seventeen cases of parturition in which chloroform was inhaled with pernicious effects. In the cases related, the injurious effects of the inhalation of chloroform were as follows: In seven cases, insanity and great cerebral disturbance followed its exhibition. The use of the forceps was rendered necessary in five cases. In two, the contractions of the uterus were arrested, and the operation of craniotomy was performed. Peritonitis or phlebitis ensued in four cases. Epilepsy or dangerous fits of syncope supervened in two instances. Many analogous cases had been confided to the author by friends; and public rumour swelled the size of the chapter of accidents; but he wished merely to give accounts of those which had come under his own observation. The author strongly animadverted upon the levity and thoughtlessness which had accompanied the use of this subtle and dangerous poison. Soon after its discovery, before the amount of its power, and even its composition, had been fully understood, he had been horrified by the announcement of its application to midwifery, and he then prophesied that deplorable results would ensue—a prognostication which experience had unhappily proved to be correct. It was natural that women, doomed to bring forth their young in pain and sorrow, should seek every means by which they might palliate the anguish they suffer; and instances related in which the process of parturition had been effected without pain, served to render nugatory the unwelcome admonitions of those who pointed to the evils that might occur. The author expressed his opinion, that the most serious effects which arose from the inhalation of this agent, were first, languid and inefficient uterine contractions; secondly, a greater susceptibility to the risks that arose from inflammation and fever. In spite of the fact, that grave and experienced physicians had expressed their concurrence with the author's views, yet the question whether chloroform should be inhaled had become almost extra-professional; as silly and ignorant women of fashion chose to set the example of using it, the cause of science and humanity thus being in the hands of the most weak and frivolous portion of the community; and, as there was a systematic concealment of the truth by the physicians who used it, he feared that young and inexperienced mothers would still be lured to their destruction. In conclusion, the author expressed a hope that his essay might tend to rescue the profession from the dominion of an ignominious and disgraceful practice.

Dr. Snow regretted that Dr. Lee had indulged in such severe remarks as those which occupied the concluding portion of his paper, more particularly as he felt great admiration for the talent displayed in the essay, and great respect for the honest and manly spirit that caused the author to attack anything which he considered injurious either to a patient under treatment, or to the cause of science generally. Dr. Lee certainly had related the history of several distress-

ing cases; but, in his (Dr. Snow's) opinion, not one of the symptoms described could be referable to the exhibition of chloroform. Dr. Lee must have known that chloroform was a most volatile spirit, and that half an hour after its application no traces of it could be found in the system; and yet, in some of the cases related it was stated, that inflammatory action had arisen two or three, and even as much as fourteen days after labour. How could the evil effects described be laid, with any show of probability, to the noxious influence of chloroform? Some of the symptoms mentioned in the cases might be naturally referred to hysteria. Dr. Lee had stated, that the chloroform checked the uterine contractions; this statement Dr. Snow could contradict, as, in the many cases in which he had superintended its employment, he had continually felt the uterus contracting firmly. The amount of the spirit inhaled in obstetric practice was trifling, compared with that taken during surgical operations. One great benefit derived from its application was, that it tended to do away with the use of laudanum; and Dr. Lee ought to hail this fact with joy, inasmuch as the time that the former drug remained in the system was so short in comparison with the former. In conclusion, Dr. Snow expressed his opinion, that, notwithstanding the recorded cases of death having occurred from the use of chloroform, which now amounted altogether to about thirty-seven, it had been the means of saving many lives, by preventing nervous excitability consequent upon severe operations.

Dr. Gream, with great respect to the learning of the author of the paper, was of opinion that he had, in this, as in many other cases, preferred antiquated measures to modern discoveries, merely because the latter were modern; and had given a list of extreme cases. He entered into the question, as to whether uterine contraction was checked by the inhalation of chloroform; and stated, that when a large dose was given, it did so favourably when the patient was exhausted by a long and painful labour. He announced that he was only a recent convert to the practice of giving ether or chloroform in midwifery.

Dr. Merriman related a case where chloroform was administered during labour. Pain ceased, and he returned home for a short time. On being called again to see the patient, after a lapse of two hours, having been told that she was very ill, he was unable to find any trace of the child; and the systemic effect was so violent, that it was long before labour recommenced, the uterus having been temporarily paralyzed. She never recovered from the effects of the narcotic, and was finally removed to a lunatic asylum. This case had so alarmed him, that he had never since given his assent to the employment of chloroform.

Dr. Chowne said, the subject had been so talked about publicly, that it had become extra-professional. He expatiated lengthily upon the history of chloroform, remarking that, in his opinion, it had been received as a professional remedy without sufficient inquiry having been made into its properties. He instanced as an example, the first check given to its unconditional application, which was owing to a death which had occurred when the patient was undergoing the operation of having a tooth removed. Disease of the heart having been discovered in that case, a rule was laid down that chloroform should not be administered when an ailment of that organ was existing. Dr. Chowne gave some more instances in illustration of his opinion, and finally referred to Dr. Merriman's patient, whom he had seen; and stated, that the ergot of rye had been administered after the chloroform, without having any action on the uterus.

Mr. Carter said, that seventeen cases on which to found a decided opinion whether chloroform was beneficial or otherwise in midwifery, were not enough. He had frequently used it himself with no evil results, except in two cases, in one of which the patient was in a very asthenical condition. In the other case, death ensued while the woman was under operation. He reminded Dr. Lee that it was frequently used in country practice.

Mr. Fergusson stated, that being engaged exclusively in surgical practice, he was unable to offer any opposition to Dr. Lee and his statements; yet he wished to know how it was, that these terrible results described, of insanity, phlebitis, and prolonged syncope, did not occur after the inhalation of chloro-

form during surgical operations. He considered that Dr. Chowne had not drawn a sufficient distinction between surgical and obstetrical practice, as regards the use of this narcotic. He could not understand how paralysis of the uterus could be caused by chloroform, when fæces and urine were often forcibly expelled when the patient was under its influence, thus showing that it does not destroy involuntary muscular action. He expressed his opinion, that our experience in England of the good or evil effects of chloroform was far too limited for a decided opinion to be given on the subject; and referred Dr. Lee to the extensive use that is made of it with beneficial results in the United States.

Dr. Lee, in reply, stated that there was a vast difference between the birth of a child and the extraction of a tooth, or a stone from the bladder, or any other surgical operation; the latter being dependent upon external manual action, the former being a work of nature, dependent upon nervous influence. The child is expelled from the uterus by regular contractions, and the exhibition of chloroform stops this action, as he had seen and as he had heard from competent persons, who had attended cases where it had been administered. Moreover, he wished to know what was the dose of the drug that should be used. It was a pretence, merely to sprinkle a few drops of the liquid upon a handkerchief, and hold it over a patient's nose—a process which he designated as “chloroform à la Reine.” And when the forceps were necessary, how could the medical attendant apply them with any safety when the woman was lying writhing about on the bed in convulsions following the use of this deleterious compound? No—woman was to bring forth her young in pain and with sorrow. This was a Divine ordinance, doubtless founded with a wise and merciful intention; and he considered that the continuance of the discreditable and cowardly practice of seeking relief from a necessary suffering, by resorting to such measures as he was combating, would be fraught with danger to her, not only physically, but also morally.

The society adjourned at the usual hour.—*Med. Times and Gaz.*

58. *Galvanism as an Obstetric Agent.*—Dr. THOMAS RADFORD states (*Lancet*, Nov. 26, 1853) that he has successfully employed galvanism in the following description of cases:—

1. In cases of tedious labour, arising from uterine inertia.
2. In cases of accidental hemorrhage, either before or after the rupture of the membranes, and especially when exhaustion from loss of blood exists.
3. In cases of “placenta prævia,” in which the practice of detaching the placenta is adopted, and the vital powers are greatly depressed.
4. In cases of internal flooding before or during labour.
5. In cases of post-partum floodings.
6. In cases of hour-glass, or irregular contraction of the uterus.
7. To originate, *de novo*, uterine action, or in cases in which it is desired to induce premature labour.
8. In cases of abortion, when the indications show the necessity, or justify the expulsion of the ovum.
9. In cases of asphyxia in infants.

Galvanism is especially advantageous as a general stimulant in all those cases in which the vital powers are extremely depressed from loss of blood. Its beneficial effects are to be observed in the change of the countenance, restoring an animated expression; in its influence on the heart and arteries; in changing the character of respiration; and its warming influence on the general surface. I have several times observed, in cases in which other powerful stimulants have failed to produce any beneficial effects, the most decided advantage accrues after its application.

I have never observed that the child, in utero, has been injured by its use, which gives it a great advantage over the administration of *secale cornutum*, which, in many cases, is destructive of it. “This drug is liable to great deterioration; its operation is not always certain, its failure depending sometimes, perhaps, on its inert qualities, but frequently on a constitutional idiosyncrasy which resists its powers. There are organic states which forbid its use; when

placenta; and it was ascertained, that the blood was not injected with greater force than that of the heart acting under ordinary circumstances. The opposite hypogastric artery was next injected, with the following results: The blood escaped freely from the torn utero-placental arteries on the surface of the uterus; none escaped from the torn utero-placental veins; while, in this case, a small quantity escaped from the detached portion of the placenta contiguous to that which was still adherent. Repeated injections led to no other results; while it was particularly remarked, that the torn utero-placental arteries on the surface of the uterus were free from any plugging previously to being injected. Two things were thus clearly shown from this experiment: 1st. The readiness with which blood escaped from the torn utero-placental arteries when the hypogastrics were injected; and, 2dly. That these arteries had not been plugged by any coagula during life. Such facts, coupled with the results of the previously related experiment, and taken in connection with various clinical circumstances, appeared to the author to afford strong grounds for the belief that the principal source of hemorrhage in cases of partial separation of the placenta was arterial rather than venous, and uterine rather than placental; and he proceeded to consider the data upon which the opposite opinion had been affirmed. In doing so he quoted the following passage from Dr. Simpson's writings, as containing a reference to the several grounds upon which the occurrence of arterial hemorrhage has been denied in cases of partial separation of the placenta. "Uterine hemorrhage, after separation of the placenta," says Dr. Simpson, "in any of the stages of labour is not arterial in its character, because the utero-placental arteries are so long and slender as to become readily closed; 1st, by the tonicity of their coats; 2d, by contraction of the uterine fibres upon them; and, 3d, principally by the changes in their tissues produced by the mechanical rupture of their coats, torn arteries being little, if at all, liable to bleed, and the placenta being separated by a true process of avulsion." With reference to the first statement, that uterine hemorrhage, after separation of the placenta in any of the stages of labour, is not arterial in its character, the author observed that, so far as he was aware, it was one which was not only unsupported by any evidence, but directly at variance with many observations which he and other medical men had made. He referred to cases in which he had distinctly observed that hemorrhage occurring between the birth of the child and the complete separation of the placenta was of an arterial character; and he referred to the fact, that the blood which escaped from the uterus of the bitch when the placenta was detached was of a bright arterial colour. With regard to the second point affirmed, that arterial hemorrhage from the uterus is prevented by the tonicity of the utero-placental arteries, he observed, that, while he believed this to be generally the case in a state of health and tranquillity of the circulation, that, under other circumstances, it might be doubted whether such was the fact. The third doctrine affirmed, that hemorrhage from the utero-placental arteries is prevented by contraction of the uterine fibres upon these vessels as they pass through and amid the uterine structure, was, in the author's opinion, completely invalidated by the well-known fact, that there is often no direct relation between the degree of uterine contraction and the degree or tendency to uterine hemorrhage; and he further appealed to the two following series of facts as being opposed to its correctness: 1st. That in several instances the placenta has been spontaneously or artificially separated from the uterus before the birth of the child, and, consequently, under circumstances in which contraction of the uterus could not take place without any hemorrhage supervening; and, 2dly, that when it has been attached to the os and cervix uteri its separation has been effected, in many cases, without any particular hemorrhage resulting, although it is affirmed by some anatomists that there are few or no contracting fibres in the structure of the os and cervix uteri. The last proposition affirmed, that hemorrhage from the utero-placental arteries is prevented by the changes in their tissues produced by the mechanical rupture of their coats, torn arteries being little or at all liable to bleed; and the placenta being separated by a true process of avulsion, was completely negatived by the author's experiments upon the pregnant bitch, for on detaching the placenta from the uterus, and thereby lacerating or tearing through the

to pour out blood anew. The author had referred to Dr. Gooch's case, in which no hemorrhage occurred, although the uterus remained of large size; and thought that so exceptional a circumstance could not support the deduction—that, therefore, the contraction of the uterus exercised no influence over the flow of blood.

Mr. Clark had assisted the author in his experiments, and bore testimony to the truthfulness of his descriptions, and the fairness of his deductions. He illustrated the latter by referring to those cases of post-partum hemorrhage in which the flow of blood begins long after the placenta has been expelled; and also by stating that, as the direction of the current is from the placenta to the uterine sinuses, the latter can supply but little, if any, blood in such cases.

Dr. Snow Beck was prepared to defend each of the author's opinions seriatim; but stated, that the author's facts might be admitted and referred to apart from his deductions. He did not think that the uterine veins could be the sources of hemorrhage, and had met with several cases of partially detached placenta, in which the hemorrhage did not cease on perfect separation of that organ. He also had met with a case so far resembling one mentioned by the author, that the colour of the blood was distinctly florid, and the source, as he believed, arterial, and the hemorrhage in that case diminished or increased with the state of contractility of the organ. He would make a distinction between the contractility of the uterus as a whole, and that of the walls of the organ, and believed that the flow of blood through the vessels is rather due to the latter circumstance. This state is induced when the uterus is manipulated either within or without; and in those instances in which the hemorrhage was arrested on detachment of the placenta, the arrest might have been due solely to the contraction induced by the manipulation.—*Med. Times and Gaz.* Dec. 24, 1853.

60. *Retroversion of the Uterus, irreducible; Pregnancy; Death; Autopsy.*—ISAAC B. BROWN communicated the following case to the Royal Medical and Chirurgical Society, Jan. 24, 1854:—

The subject of this case was a young woman, aged twenty, of delicate appearance, who first suffered from prolapsus uteri, brought on by lifting a heavy weight, but which was relieved by a bandage, and from which she appeared to suffer no inconvenience. She became pregnant, and, increasing in size, she first sought medical relief from the difficulty she experienced in emptying the bladder, and then only by great straining, passing but small quantities, suffering, however, in the interim, from incontinence of urine. She was admitted into St. Mary's Hospital; and, on examination, the author found the anus very open and the rectum protruding, as in a bad case of prolapsus ani; the perineum distended and tense, and the labia partly open, through which an oviform body was discernible. On passing the finger within the labia, a large tumour was felt behind the posterior wall of the vagina, and on exploration by the rectum, the tumour was felt anterior to it. The whole pelvic cavity was filled with the tumour. The bladder being first emptied, two fingers of the right hand were passed under the arch of the pubis to the brim of the pelvis, and then the os uteri was felt pressing the neck of the bladder firmly against the pubis, the posterior lip of the os being in this case inferior. The movements of the fœtus were distinctly felt. The urgency of the symptoms which rapidly followed her admission into the hospital precluded all hope from surgical interference. Vomiting of a dark grumous matter came on; she rapidly sank, and died the third day after admission. On a *post-mortem* examination, the peritoneal surfaces indicated considerable inflammatory action; the bladder was much dilated and flattened, adherent anteriorly to the abdominal walls, and contained some fetid ammoniacal urine; the mucous membrane appeared disorganized. The intestines being removed, the uterus was found occupying the pelvic cavity, to which it was completely moulded in its retroverted condition, with its fundus pressing against the posterior wall of the vagina and sacrum, and the os, high up behind the arch of the pubis, in firm contact with the neck of the bladder. A fœtus of five months, with breech presentation, was found within the cavity of the uterus. The author concluded the paper with some practical observations on the treatment of such cases.

Mr. Streeter said it was singular that not a single case of retroversion of the uterus had been placed on record in the *Transactions* of the Society. The affection, however, was well known to all well-informed accoucheurs, since it had been figured by Dr. William Hunter in his 26th plate. The possibility of its continuance till the full period of gestation, and of delivery by the natural efforts with safety to the mother, had been established by Dr. Merriman, in the sixteenth volume of the *Medical and Physical Journal*, in 1806, by the publication of two cases; and where, indeed, the whole subject was ably discussed. He had risen, however, not so much to comment on the subject, as to place on record another case of safe delivery at the full term, and thus add another to the data already recorded for guidance in these embarrassing and difficult cases. It occurred in the practice of Mr. Nicholas Stone, of Mayfield, Sussex, one of the contemporaries and earliest pupils of Astley Cooper. At the patriarchal age of eighty-six he writes the particulars: "The case to which Mr. J. Streeter refers, made such an impression upon my mind at the time it occurred, that I believe I shall never forget it. It must have been more than fifty years ago, but I have a vivid recollection of its particulars. I made an examination, and found the head of the child occupying the whole pelvis, and resting on the perineum. Something peculiar intervened between my finger and the head of the child. In consequence of this, I sat down for some minutes to consider what the case could be, and then made a second examination, and found that I could not pass my finger round the head towards the rectum. I then again considered the case, and upon a third examination, passed my finger by the child's head to the pubes, where I discovered the os uteri and the membranes pressing on it. I found the membranes, upon the return of the pain, pushed down, and to my surprise, felt one foot of the child presenting; the head receded, and I delivered the child by the feet. The woman was deformed, and had had children before—how many I do not recollect. Although deformed, the pelvis was capacious, as there was no difficulty in the delivery. The child lived, and the woman did well." Other cases were to be found in Moreau's *Traité d'Accouchement*, and Dr. Bedford's translation of Chailley, and one in Sabatier, which proved fatal from mischief to the bladder. With reference to the practical suggestions in the case read to the Society, he could not sit down without remarking that the tenor of the cases already recorded, appeared to show that the making an incision into the fundus of the uterus was a very questionable proceeding.

Dr. Copland remarked that the extraordinary enlargement of the bladder in Mr. Brown's case, and the adhesions of the pelvic viscera, took it out of the category of the usual cases of retroversion of the uterus.

Mr. I. B. Brown said, that the observations and cases recorded by the last speaker did not bear upon the case which he had placed before the Society; for in Mr. Streeter's case there was sufficient pelvic space to allow the fœtus to grow to the full period, whereas in this case the pressure on the pelvic viscera was so great as not only to destroy the functions of the bladder, but also to produce organic disease of that viscus; and, again, the pressure on the rectum was so great as to destroy its functions, and then the patient actually died from these causes. He (Mr. Brown) intended, when making his practical remarks, to point out the importance of doing everything, even to puncturing the uterus, and drawing off the liquor amnii, that could enable the surgeon to replace the uterus beyond the promontory of the sacrum, and to keep it there by restraining the patient to the position described in the paper. He observed, that if death were not feared, it was certain that extensive disease must be anticipated in some of the pelvic viscera by the long-continued impactment of the impregnated uterus; and, therefore, it was of the highest importance to attempt at the earliest possible period the reduction of the retroversion. He said that reduction in this case was impossible even at the *post mortem* examination, so firm was the impactment.

[A very interesting case of retroversion of the uterus, in which reduction was impossible even after death, is recorded, by Professor C. D. Meigs, in the No. of this Journal for October 1853, p. 337.—Ed.]



## MEDICAL JURISPRUDENCE AND TOXICOLOGY.

61. *Retention of a Dead Fœtus*.—Dr. PICKETT, of Great Barrington, Mass., relates the following case, which is of some interest in medical jurisprudence:—I was called to Mrs. R., of Stockbridge, whom I found in labour, and which lasted some six hours. This, for her, was rather severe, but she was safely delivered of a large, healthy child, apparently at the full time. While examining for the placenta, I discovered something had apparently ossified. The placenta soon passed off and with it this apparently foreign substance, which proved to be a dead and partially decomposed fœtus, of about four months.

The query with me is, how could nature's function harmonize, in thus enabling the mother to carry both a dead and living child for at least five months? The mother recollects, that when about three or four months advanced in pregnancy, the sudden announcement of the death of a relative produced a fainting fit, some sickness of stomach, and slight indisposition for two or three days. Since then, up to the time of her labour, she has enjoyed uniform good health.—*Boston Medical and Surgical Journal*, December 7, 1853.

(Such cases, although uncommon, occasionally occur. Dr. Porter has related some, we think, in previous volumes of the *Amer. Journ. of Med. Sciences*.)

T. R. B.

62. *Duration of Human Pregnancy*.—Dr. SIMPSON, Professor of Midwifery in the University of Edinburgh, adds his testimony to that of many others who have gone before him, in favour of the uncertainty of the length of human pregnancy, and asserts that "deviations from it, both in the way of diminution and of excess of time, are perhaps far more common than is generally supposed." We quote some cases that have fallen under his own observations.

CASE I. This patient was married in September, 1845, and was supposed by her medical attendant to be pregnant in the earlier months of 1846. The case, however, proved to be one of that common affection, "spurious pregnancy," and the catamenia, after being eight months obstructed, returned regularly. I first saw her in the course of the following year, in consequence of her suffering under leucorrhœa, and symptoms of chronic inflammation of the cervix uteri. The cervix uteri was enlarged and ulcerated, and the fundus greatly anteverted. The uterine inflammatory symptoms yielded under appropriate treatment, but the anteversion remained. In July, 1848, an intra-uterine pessary was introduced with a view of rectifying this displacement. The instrument remained in the uterine cavity till the end of October following. Immediately after its removal pregnancy occurred, and she was delivered of a daughter in July, 1849, the labour being rendered very severe and tedious, by extreme rigidity of the tissues of the cervix uteri. From this cause, the patient was during parturition fourteen hours continuously under chloroform. It was in the next, or second pregnancy, that there was the apparent prolongation of utero-gestation. In the first week of January, 1851, the menses were present and disappeared on the 4th or 5th of the month. On the 20th of January, there occurred a return of menstrual discharge for six days, in consequence of great mental distress at the death of a favourite brother. No menstrual discharge appeared from that date, and she was confined on the 28th of December, that is, 336 days after the last appearance of the catamenia. From the patient wishing to go abroad, I was asked to ascertain if she were in the family way, towards the end of April. In consequence of the size and shape of the uterus, &c., I had no hesitation in concluding, at the time, that she was then at least two months advanced in pregnancy, and I calculated for her that she would be confined about the middle of November. Parturition, however, as I have already stated, did not occur till the 28th of December.

CASE II. Mrs. ———, the mother of two children, and always quite regular in her menstrual periods, except when pregnant and nursing, began to menstruate about the 20th of September, 1851, and the discharge ceased on the 24th. Shortly after this date she had feverish symptoms, and from the cat-

menia not returning, she considered herself pregnant. She was not delivered, however, till August 3, that is, 332 days from the last day in which the menses appeared.

This lady's case was interesting otherwise. In the middle of December, in consequence of a long walk, she was threatened, in London, with symptoms of miscarriage, requiring rest and treatment. On the 3d, or rather morning of the 4th of January, a large steamer, in which she was, caught fire when two or three days out at sea, and only a small number of the passengers and crew escaped. After making almost superhuman exertions to save herself and a young son seventeen months old, whom she held in her arms, and after having her body severely bruised and contused, she was exposed for seventeen hours in an open boat, with little or no clothing, and sitting immersed several inches deep in water, during that long and anxious period. Yet all the fearful mental excitement and bodily exertion to which she was thus exposed was accompanied with no tendency to miscarriage, though two or three weeks previously a long walk had nearly brought on abortion.

Could the protracted mental agitation and trial have in any way led to the unusual prolongation of her pregnancy?

CASE III. A patient had the usual menstrual discharge in March, 1852, and it left her on the 23d of March. She was not delivered until 319 days (February, 1853). After their last appearance, Dr. Simpson examined her in May, 1852, and found the uterus so enlarged, as to leave no doubt whatever that she was then about two months pregnant. She had been married several years and without any family, when she first came under Dr. Simpson's care. The uterus was retroflexed, and for this she wore for some time an intra-uterine pessary. After its removal she became distended, and had various other symptoms of pregnancy, as very dark and enlarged areolæ. But the uterus did not increase in size. The present prolonged period of gestation occurred with the lady's fourth child.

CASE IV. The following case Dr. SIMPSON received from Dr. YOUNG: The patient was always regular in her menstrual discharges, and they were present from the 9th to the 14th of July. She felt sickness towards the end of the same month, and continued so, more or less, for four months, or towards the end of November. Fœtal movements were distinctly felt on the 17th of November. She was delivered on the 3d of June (10 months and 18 days), being 324 days after the last appearance of the menses, and 6 months and 16 days, or 198 days after the first symptoms of quickening.—*Monthly Journal of Medical Science*, July, 1853.

T. R. B.

63. *Nicotine*.—A discussion occurred in the Belgian Academy of Medicine on the 15th of October, 1853, as to the priority of discoveries concerning the action of this poison by Orfila, or Stas. While the early observations of Orfila on the absorption of many mineral poisons, and of some of the vegetable ones, were duly acknowledged, the friends of M. Stas urged the adoption of the following resolutions:—

*That the priority of the discovery of the absorption of nicotine, of its immutability in the animal economy, and of the means to obtain this poison, without change or loss, belongs to M. Stas.*

*That the researches of M. Orfila on nicotine are later than those of M. Stas, by half a year.*

It appears, however, that these were not adopted. A general resolution of thanks was voted to him, and the public are referred (the best reference) to his *Memoirs*, printed by the Academy.—*Gazette Médicale de Paris*, December 17, 1853.

T. R. B.

64. *Rape on an Idiot*.—In the Court of Common Pleas of Athens County, Ohio. March Term, 1853. Before Mr. Justice Nash.

State of Ohio against John Crow.

A female idiot, or an insane female, may be the subject of a rape.

An assault with an intent to commit a rape may be committed on the person of an insane female, or a female idiot.

The crime of having carnal knowledge of an insane female, knowing her to

be such, is consummated when the act is done knowingly with her acquiescence or consent.

The word insane in the sixth section of the act for the punishment of crimes, Curren's *Revised Statutes*, pp. 184, 185, is used in its elementary and popular meaning, unsoundness of mind; and hence, embraces the case of one's having carnal knowledge of a female idiot, knowing her to be such.

The defendant was indicted: 1, for having committed a rape on the person of Louisa Dowler; 2, for an assault with the intent to commit a rape on said Louisa; and, 3, for having had carnal knowledge, she, said, Louisa being an insane woman, and he, said, defendant knowing her to be such. The defendant pleaded not guilty, and the cause was tried by a jury at the last March Term of the Common Pleas.

The evidence on the trial proved that said Louisa Dowler was of unsound mind, and had been so from her nativity; though she was not so absolutely destitute of mind that she did not perform the necessary functions and calls of humanity; but that she had not mind enough to testify as a witness, or to be held legally responsible for her acts, whether civil or criminal.

The words of the statute are: "That if any male person, seventeen years old and upwards, shall have carnal knowledge of any other woman than his wife, such woman being insane, he knowing her to be such, every person so offending shall be deemed guilty of a misdemeanor, and upon conviction thereof, shall be imprisoned in the penitentiary, and kept at hard labour not more than ten, nor less than three years."

Mr. Knowles for the State.

Messrs. Nye and Jewett for defendant, claimed that the said Louisa, being an idiot, had no will, and, therefore, that a rape could not be committed on her person against her will; it was further claimed that the word insane, in the sixth section of the act, did not embrace an idiot; and, hence, that the defendant could be convicted of neither of the charges embraced in the indictment.

Mr. Justice NASII. It is claimed, *first*, that a female idiot is not the subject of a rape; that she has no will, and hence, an act cannot be done to her person against her will. No authorities are cited for this startling position. On looking into the books I can find no such distinction intimated; and, if such was the law, it is singular that so important a qualification of the crime of rape should not have been noticed hitherto in any treatise on this subject. Rape is defined to be, the having carnal knowledge of a female, *forcibly and against her will*. There is here no limit to the use of the word female; nothing said as to the soundness or unsoundness of her mind, as to idiocy or insanity. In this respect, our statute follows the common law; and must, therefore, be construed as the same words were construed in the definition of the crime at common law.

There is another consideration not to be overlooked. The section providing for punishing assaults with a criminal intent, declares that an assault committed on another, with the intent to commit a rape, shall be criminal. Now, if a rape cannot be committed on the person of an idiot, then it is no crime to assault her person with such an intent. The same question applies also to assaults committed on an insane person; since this argument places them without the protection of the law, punishing the crime of rape. Nor are insane persons protected under the sixth section, since the crime there described is committed only when the perpetrator knows the woman to be insane. Indeed, that section is clearly limited to the case of a male person's knowingly having sexual knowledge of an insane female without resistance on her part, and with her acquiescence. Hence this section cannot be made to embrace the case of one having such sexual intercourse forcibly and against the will or resistance of such insane female.

It is further claimed that an idiot is not an insane person under the meaning of that term in the sixth section. This result, then, follows, that a female idiot is left wholly unprotected against this class of crimes. A person cannot be punished for having carnal knowledge of her person forcibly and against her will, as she has no will to overcome; she is not an insane person, and so not under the protection of the sixth section, and neither an idiot, nor an insane female is protected against assaults made with an intent to commit a rape, since a rape cannot be committed on the person of either.

It must require some very cogent reasoning, or some very convincing authorities, before the court could be induced to give a construction to a statute which must lead to such results. But here is no such authority; no such decision has been found. Is there any more force in this reasoning? Let us examine it for a moment.

In the first place, where the carnal knowledge is had by *force*, it must be against the will of the female. Nor need there be any direct evidence of this action of the will; the law implies the want of consent from the force itself. It is the *consent* of the female which takes away all criminality from this connection; it is this want of consent which renders this connection obtained by force, criminal. Hence, if an idiot has no will to be overcome, she has none to consent; and then the law implies that the act being accomplished by force, is done against her will.

But is it true that an idiot or insane person has no will? What is the definition of these two words? Do they imply the *loss* of *will*, or a mere *unsoundness* of mind? These words are thus defined by Webster: "Idiot—a natural fool, a fool from birth; a human being in form, but destitute of reason or the ordinary intellectual powers of man. Insane—unsound in mind or intellect; mad; deranged in mind;" and one of the words used to define *insanely* is *foolishly*. Fool is defined to be one who is destitute of reason, or the common powers of understanding; an idiot. Some persons are born *fools*, and are called *natural fools*; others may become *fools* by some injury done to the brain. In Chitty's *Medical Jurisprudence*, p. 348, "an idiot is defined to be a person who has been *defective* in intellectual powers from the instant of his birth, or at least before his mind had received the impression of any idea." Again: Chitty says "that idiocy consists in a defect or sterility of the intellectual powers; but it may be induced in after life; while lunacy or madness consists in a *perversion* of intellect." All these definitions imply either a *weakness*, or *perversion* of the mind, or its powers, not their *destruction*. The powers are still all present, but in an impaired and weakened state. Hence, an idiot cannot be said to have no *will*, but a *will weakened* and *impaired*—a will acting, but not acting in conformity to those rules, and motives, and views, which control the action of the will in persons of sound mind. Indeed, in an insane person, the will is too often fearfully active, and wholly uncontrollable by reason or persuasion. There is here no lack of will, but simply a *perversion* of it. Nor is this the most conclusive answer to this argument. If there is no will, how are the voluntary actions continued? Actions, which like respiration, are instinctive, are independent of the will; but eating, and numerous other acts, which necessarily imply the exercise of the will, are performed by idiots and insane persons; and their exercise demonstrates the existence of a will; of a will which can assent to, or dissent from, what are clearly voluntary acts. I have, therefore, no hesitation in holding that both idiots and insane persons are possessed of a will, so that it may be legally and metaphysically said, that a carnal knowledge may be had of their persons *forcibly* and against their will.

The next inquiry is, what is the proper construction to be given to the word *insane*? In the sixth section of the act for the punishment of crimes, Curren's *Revised Statutes*, p. 184, that section provides: "That if any male person, seventeen years old and upward, shall have carnal knowledge of any woman, other than his wife, such woman being *insane*, he knowing her to be such, shall be deemed guilty," &c. It is claimed that this word *insane* does not embrace a female who is an idiot. We have already seen that idiocy may be induced after infancy, as well as be congenital, Chitty's *Med. Jurisp.* p. 347, and that both terms are defined by the same words *unsoundness of mind*. In the one case, this unsoundness of mind develops its existence in want of capacity to reason at all; or, at least, in a much less degree than the generality of mankind; while, in the other, there is perhaps greater acuteness, though upon false and fancied hypothesis. Chitty's *Med. Jurisp.* p. 348. Still, in both cases, unsoundness of mind is the cause. The very origin of the word *insane* demonstrates this; in its Latin origin, it is a word simply meaning *unsound*, and nothing more; and in the popular language it is used in this sense to this day, whatever may be the specific meaning attached to it by writers on mental diseases.

If, then, the object and policy of this statute embraces idiots as well as lunatics, there is nothing in the use of the word *insane* which absolutely precludes us from giving that elementary meaning to the word in this statute. The reason of this provision clearly applies to idiots, as well as to lunatics; if there is any reason in the case of female lunatics, why sexual intercourse with them should be prohibited, equally strong is the reason why it should not be permitted with female idiots. If the offspring in the one case might be affected with insanity, so in the other it might with idiocy. Whatever reason, therefore, can be found to call for the law in relation to female lunatics, will apply in an equally cogent manner to idiots. If the one class ought to be protected, equally so ought the other.

Such then being the manifest scope of the law, I can have no hesitation in concluding that such was the intention of the legislature; that this word *insane* was used in its elementary and popular meaning, as descriptive of that unsoundness of mind which renders individuals civilly and criminally irresponsible for their acts, whether that unsoundness discloses itself in idiocy or lunacy.

In accordance with these views, I hold that a female idiot, or an insane female is the subject of a rape; and, hence, of an assault with the intent to commit that crime; and that a male person, of a proper age, who shall have carnal knowledge of a female idiot, knowing her to be such, is guilty under the sixth section of having carnal knowledge of an insane woman, knowing her to be such.

The jury were so charged, and they returned a verdict of guilty of an assault with an intent to commit a rape, and not guilty on the other two counts. And sentence was passed on the prisoner.—*Western Law Journal*, vol. x. pp. 501-5. T. R. B.

65. *Hydrate of Magnesia and Hydrated Oxide of Iron as Antidotes for Poisoning with Arsenic.* By M. SCHROFF.—Mr. Bussy has prepared the former as an antidote, and in order to test the comparative merits of each, M. Schroff undertook a series of experiments. Rabbits were selected as the animals, as they do not possess the power of vomiting, and they were kept without food for sixteen or eighteen hours. The poison and the antidote were injected directly into the stomach by means of a small syringe with an elastic tube. After the injection, the animal was again kept without food for five or eight hours, in a cage so constructed, that the urine which might be voided was collected, and this was submitted to a careful chemical and microscopical examination.

The chemical analysis of the matters examined for arsenic was made according to the method of M. Schneider. This method is founded on the transformation of arsenious acid into chloride of arsenic. The organic substances suspected to contain arsenic are put into a tubulated retort, and common salt, equal in weight to the substance operated upon, is added to it. A tubulated and quilled receiver is fitted to the retort, a small bottle being attached to the quill, so as to collect any liquor that may condense in the receiver, and a tube bent twice at right angles being fixed to the tubule from above, and terminating in a vessel half filled with water. Pure concentrated sulphuric acid is now poured into the retort through a safety-tube, and after the reaction has continued for some time in the cold, the retort is gently heated. The ascent of hydrochloric acid converts the arsenious acid into volatile chloride of arsenic, which distils over with the aqueous vapour and excess of hydrochloric acid gas. Most of the chloride of arsenic will condense in the receiver as a heavy liquid, but a portion of it will pass on with the hydrochloric acid gas, and be collected in the vessel containing the water. The distillation is to be continued until what passes over ceases to give a yellow precipitate with sulphuretted hydrogen. If the collected liquors do not contain sufficient arsenic to give a precipitate with sulphuretted hydrogen, this may still be tried for arsenic by Marsh's apparatus. (In delicate investigations, the author recommends that the contents of the retort, as well as the distilled liquor, should be tested by Marsh's apparatus, in which case, the liquid from the retort should be first treated with chlorate of potash, in the usual manner, so as to decompose the organic matters.)

It was ascertained by some preliminary experiments, that 0.05 of a gramme (somewhat less than a grain) of arsenious acid, rubbed to powder, mixed with

five grammes of water, killed a rabbit in two or three days, and that 0.15 of a gramme caused death in about four hours.

In order to test the effect of magnesia as an antidote, a gramme of magnesia (about fifteen grains, Troy weight) was mixed with 0.05 of a gramme of arsenious acid, mixed with water, and administered to a rabbit. In another case, the arsenious acid was first administered by itself, and the magnesia about an hour afterwards. Neither of the animals died, but they both manifested symptoms of poisoning, which did not entirely disappear for about eight days, and the presence of arsenic was detected in the urine.

Magnesia is not, therefore, strictly speaking, an antidote, but it is capable of greatly mitigating the poisonous effects of arsenic.

The results obtained with hydrated oxide of iron were less satisfactory than those with magnesia. A rabbit, to which 0.05 of arsenious acid, with 1.35 gramme of hydrated oxide of iron was administered, died at the end of six days. Another, to which the arsenious acid was given alone, and the oxide of iron about an hour afterwards, died the following day.

The author draws the following conclusions from the results of his experiments:—

Hydrate of magnesia, and hydrated oxide of iron, are both capable, to a certain extent, of mitigating the poisonous effects of arsenious acid, and hydrate of magnesia is certainly the most efficacious of the two. Hydrate of magnesia, being more finely divided and lighter than the other, does not promote alvine dejections so much. Arsenite of potash causes death more quickly, and in smaller doses, than arsenious acid, and the poisonous effects of this salt are neither neutralized, nor even mitigated, by acetate of magnesia, or acetate of peroxide of iron, but, on the other hand, the fatal result is expedited.—*Pharmaceutical Journal*, July, 1853, from the *Journal de Pharmacie*. T. R. B.

66. *Hydrate of Magnesia as an Antidote in Poisoning*.—SCHUCHARDT represents as the result of his experiments, that hydrate of magnesia is a certain antidote, not only for arsenious acid, either in solution or substance, but also for corrosive sublimate, for the salts of copper, and even, although in this respect the experiments are not so satisfactory, for the alkaloids, such as morphia and brucia. The hydrate of magnesia may be prepared by mixing slightly calcined magnesia with water. In poisoning with arsenious acid, magnesia, given as an antidote, should exceed eight times the weight of the poison. For corrosive sublimate the antidote need not exceed five times the weight of the poison.—*Ibid.* from *Journal de Pharmacie d'Anvers*. T. R. B.

67. *Poisoning by Strychnia*.—This case occurred near London. The prescription was: R. Strychnos nux vomici ℥ij; bismuth trisnit. ziss. M. Ft. pulv. xxiv. The prescription was prepared twice or thrice at different shops, and produced no bad effect; but, on one occasion, the young man put in strychnia and nux vomica, of each ℥ij. The patient took one dose, and very soon afterwards complained of some extraordinary sensations, and almost immediately expired. The *accomplished dispenser*, from the prescription forming part of two lines, supposed the article to consist of two substances.—*Pharmaceutical Journal*, July, 1853. T. R. B.

68. *On the Action of Hydrated Peroxide of Iron*. B. M. FEHLING.—At the suggestion of the Medical College in Stuttgart, Fehling has made some experiments on the action of hydrated peroxide of iron, which has been kept for a longer or shorter time. He found that:—

1. 100 grammes of the pasty fresh precipitated hydrate, prepared according to the directions of the Pharmacopœia, and containing five per cent., precipitates 0.350 grammes, and almost 0.400 grammes of arsenious acid; while that which had been kept a year, precipitated only 0.200, even after digestion for two hours.

2. That hydrated oxide of iron precipitates arsenious acid in the same quantity, when combined with potash, soda, or ammonia, as when in a free state. The presence of sulphate of ammonia, of chloride of ammonium, of free ammonia, of carbonate of potash, or soda, is not prejudicial to the precipitating.

3. The liquid obtained by precipitating sulphate of iron by an excess of magnesia, and containing, besides hydrated oxide of iron, free magnesia, and sulphate of magnesia, precipitates arsenious acid in larger quantity than the hydrated peroxide of iron present in it does alone. It precipitates the arsenious acid of Fowler's solution; from solutions of Schweinfurten Green, in vinegar, both arsenious acid and oxide of copper, while the pure hydrated peroxide does not precipitate oxide of copper.

4. According to these results, it cannot be doubted, that it is better to prepare the hydrated oxide as occasion may require fresh from a solution of a persalt kept for that purpose. Fehling recommends the use of persulphate of iron and carbonate of soda.—(*Archiv der Pharmacie*) *Pharmaceutical Journal*, Aug. 1853.

T. R. B.

69. *Poisoning by Ink*.—A drunken soldier had given to him a large glass of ink, under the pretence that it was porter. He drank it, and after sleeping for an hour, awoke in the most violent pain. It was at once evident from the black stains upon the lips and tongue, as well as from the residue of the liquid left in the glass, that the symptoms were occasioned by the ink. The patient suffered extreme weakness, trembling of the muscles, and violent beating of the heart. These symptoms of gastro-enteritis were likewise accompanied by nervous affections, headache, and very painful cramps in the thighs. After four or five hours, the patient commenced vomiting a pasty mass mixed with ink, which gave strong indications of sulphuric acid. Mucilaginous and saccharine beverages were given, and after a short time he improved. He was convalescent on the third day, but still complained of weakness, trembling, and an oppressive pain in the back of the head.—(*Oester. Zeitschrift*) *Pharmaceutical Journal*, October, 1853.

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70. *Cases of Poisoning*.—CHEVALLIER has recently communicated to the *Journal de Chimie Médicale*, several cases, an abstract of which is given below.

1. *Poisoning by Copper*.—A husband attempted to poison his wife by adding verdigris to a dish of beans. The bad taste prevented her from eating them. He buried the cooked mess in his garden, from which it was disinterred, and then examined by chemists. They proved the certain presence of the metal. The criminal pretended that it was derived from a bunch of phosphoric matches, but could not prove even their presence.

He was condemned to hard labour for life.

2. *Poisoning of a Fountain by Arsenic*.—A person was brought before the Court of Assizes, charged with this crime.

The arsenic used was in powder, and it discoloured the water with a white appearance, which prevented the inhabitants of the commune from employing it for their daily drink. A woman, however (although warned against it by her husband), collected a quantity, and having removed with the point of a needle a globule swimming on the top, through curiosity, put it on the end of her tongue. Soon pain and contracting of the throat, so that she could not swallow, succeeded, and she was so satisfied of being poisoned, that a complaint was made to the official authorities.

A chemical examination was made, and the substance diffused through the water was proved to be *white oxide of arsenic*. The crime being proved, the prisoner was condemned to hard labour for twenty years.

3. *An attempt to Poison with Ammonia*.—A mistress of an officer, he being desirous of breaking up the connection, at their last proposed interview, attempted to make him swallow a quantity of ammonia. A physician (Dr. Cassius) was sent for immediately. He found the lips excoriated with phlyctene, and the tongue swollen and deprived of its epithelium, and the mouth and palate abraded. The throat was so painful as to prevent swallowing, and pressure on this and the region of the œsophagus was very painful.

The testimony was to this effect. The jury acquitted the female as to the charge of poisoning, but convicted her on that of causing wounds which incapacitated the sufferer for twenty days, and she was sentenced to an imprisonment of two years.—*Gazette des Hôpitaux*, Dec. 31, 1853.

T. R. B.

# AMERICAN INTELLIGENCE.

## ORIGINAL COMMUNICATIONS.

*On Trismus Nascentium.* By NICHOLAS MERIWETHER, M. D., of Montgomery, Ala.—This disease generally appears sporadically, but sometimes endemically, rarely attacking white children; which is to be accounted for by the superior cleanliness of the white race. To show the great prevalence of this disease in some portions of the Southern States, I will quote the following from a paper in the May number of the *New Orleans Medical and Surgical Journal*, on the negro and his diseases, by S. L. Grier, M. D., of Miss.:—

“The first form of disease which assails the negro race among us, is trismus. The mortality from this disease alone is very great. No statistical record, we suppose, has ever been attempted, but from our individual experience we are almost willing to affirm that it decimates the African race upon our plantations within the first week of independent existence. We have known more than one instance in which, of the births for one year, one half became the victims of this disease, and that too in despite of the utmost watchfulness and care on the part of both planter and physician. Other places are more fortunate, but all suffer more or less; and the planter who escapes a year without having to record a case of trismus nascentium, may congratulate himself on being more favoured than his neighbours, and prepare himself for his own allotment, which is surely and speedily to arrive.”

When this disease appears endemically on a plantation, it may be arrested by having the negro-houses whitewashed with lime inside and out; by raising the floors above the ground; by removing all filth from under and about the houses; by paying particular attention to cleanliness in the bedding and clothes of the mother, and in the dressing of the child so as to prevent any of the matter from the umbilicus lying long in contact with the skin of the latter. To effect this last, I usually slit a small piece of old linen, and, after greasing it, pass it between the abdomen of the child and the dressing usually applied to the umbilicus. This is to be renewed every day. The planter or overseer should be requested to examine and see whether there is any disturbance of the bowels for the first ten days after birth, so that the physician may have early notification. So much for prevention.

From the similarity of trismus to traumatic tetanus, it has been supposed that the disease is caused by absorption of pus by the umbilical vessels. I am inclined to that opinion, and base my treatment accordingly. In all the cases I have seen, there was an unhealthy appearance of the navel, and disturbance of the bowels; the passages were generally greenish and ill looking. When called early to a case (that is, as soon as there is spasmodic action in the muscles of the extremities and back, which appears usually before the affection which characterizes the disease as infant lock-law), I commence the treatment by giving the following mixture: R. 30 gtts. paregoric; 2 gtts. oil turpentine; 4 grs. gum kino; 1 teaspoonful prepared chalk, to be mixed in 8 teaspoonfuls of water; a teaspoonful to be taken every



hour or two, taking care not to narcotize the child. If the disturbance of the bowels continues, or if the spasm of the muscles does not cease, I apply a blister immediately over the navel; the blister should be circular, and larger than a dollar. With this treatment, I have rarely failed to arrest the convulsions, and save the patient.

*Five Fractures occurring in a Child at the same time; successfully treated by the Starch Bandage.* By GEO. M. DEWEY, M. D., of Keytesville, Mo.—On the 16th of August, 1853, I was called to see a little girl, named Maria White, aged six years. This child, while at play with an older sister in a flour mill, became entangled, by her clothes, with an upright shaft, around which she was carried very rapidly, for three or four minutes, before the mill was stopped. On one side of the shaft was a pile of bags of wheat, on the other the mill-stones, leaving a space of some eighteen inches through which the child was carried; some part of her body or limbs struck the bags or stones at every revolution of the shaft.

The following was the result: Fracture of the left humerus near the insertion of the deltoid; fracture of the left femur through the middle third; compound fracture of the right femur, at the lower third, with protrusion of the upper fragment, and considerable venous hemorrhage; fracture of the right tibia and fibula at the upper third. I found the patient, one hour after the accident, with feeble pulse, cool skin, and great prostration of the nervous system. No pulsation in the right leg, in consequence of displacement, and effusion at the seat of fracture. Gave brandy and laudanum, which soon brought on reaction.

I immediately called in consultation Dr. Isaac P. Vaughan, of Glasgow. By his advice and assistance we applied the starch bandage to all the fractured limbs, and kept the patient under the influence of chloroform during their application.

On the following day, fearing gangrene of the right foot, in consequence of obstruction to the circulation, and the bandages having hardened a little, I divided the bandage on the right limb through its whole length, and cut out a circular piece corresponding to the wound in the thigh. I found the foot cold, livid, and vesications appearing in several places. Applied warm poultices, and at the end of five days warmth gradually returned. For the first ten days following the accident there was considerable constitutional disturbance, and the child being very irritable and ungovernable, I kept her under the influence of morphia most of the time.

Sept. 5. The wound in the thigh having healed, and the bandages becoming loose, I split them longitudinally, and took out an inch or more, brought them together, and applied another bandage over.

23d. Removed all the bandages. Perfect union had taken place in all the fractures, without deformity, except in the right leg, which is a little crooked, and slightly shortened.

February 2, 1854. My patient is playing about with great glee, and with a very slight halt in her gait.

KEYTESVILLE, Mo., February 3, 1854.

*Repeated hourglass Contractions of the Bladder during Lithotomy.* By J. L. PEIRCE, M. D., of Bucks County, Pennsylvania.—Having in consequence of long-continued ill health been compelled to leave Philadelphia, I took up my abode in Richmond, Indiana, and entered into partnership with Dr. Plummer of that place. On the 1st of October, 1842, the son of

forceps were again inserted, but as soon as they came in contact with the mucous membrane the bladder contracted, forcing the stone behind the pubes, where it was again retained as if by a ligature around the middle of the bladder, while the inferior portion thereof was entirely soft and flabby. I did not keep an account of the number of times this process was repeated, but should suppose it was at least six or eight times. Finding that my efforts were thus unavailing, I handed the instrument to my friend, Dr. Swain, requesting him to manipulate. He did so, but after making ten ineffectual attempts, in each of which he was baffled by the same spasmodic contraction of the bladder, he returned me the forceps, stating that he could not succeed. I now saw that some plan must be devised to intercept the communication between the two portions of the bladder; and for this purpose I bent a small sound into the shape of a loop; with my finger I extricated the stone from its hiding-place; placed the sound across the bladder so that its contracting should not again force the stone behind the pubes; gave the sound to an assistant to hold; inserted my finger followed by the forceps; seized the stone; slightly enlarged the incision in the bladder to admit of its passing, and extracted it.

The stone was found to be of the size and shape of a large black walnut. Its length was one and nine-sixteenths of an inch, its breadth one and seven-sixteenths of an inch, and its thickness one and four-sixteenths of an inch. It was very rough exteriorly.

A large catheter was inserted into the opening in the bladder, and the patient was put to bed. I remained with him during the night. After the operation he appeared entirely comfortable until about six o'clock in the evening. My attention was then drawn to him in consequence of a very hurried respiration, and his exclaiming repeatedly, "How it hurts." I found his hands cold, his pulse very rapid and feeble, and in a few moments it became fluttering. I administered a dose of carb. ammoniac. By this time his pulse at the wrist was imperceptible. A dose of camphor and Doyer's powder was then given, and in about fifteen minutes all became tranquil, pulse natural, warmth restored. At about eight o'clock he fell asleep; rested very comfortably during the night; no pain, no unpleasant symptoms; and at about nine o'clock on the morning of the 25th I returned home.

26th. Has had three sinking spells since I left him yesterday; appeared comfortable during my visit. From this time for six days, these sinking spells recurred about three times daily, but were relieved by the powders above mentioned. A violent bowel complaint existed during the first four days; during which a portion of the evacuations passed by the wound. On the 29th and 30th, no stool. On the 31st, a passage by the natural channel, and subsequently one by the wound.

February 2. Patient very languid; no disposition in the wound to heal; stools and urine still pass by the wound. Ordered a nourishing diet of chicken, pigeon, &c., and a tonic mixture, mist. ferri comp., was given in doses of half an ounce, three times a day.

4th. A great improvement in the general appearance of the patient; appetite good; colour more natural; says he feels stronger. Two evacuations yesterday by anus; but two to-day by wound.

6th. The wound has healed rapidly since the last visit, and looks healthy.

8th. The boy continues entirely comfortable; the evacuations at times pass by the wound; but all appearance of inflammation or granulation in the wound has ceased. I filled it with patent lint. A diarrhoea has troubled him some during the last two days, and a worm yesterday passed by the wound.

10th. Granulations have again sprung up, and the wound has a more healthy appearance. Diarrhœa has ceased.

12th. Found my little patient comfortable and happy. The wound has closed considerably since my last visit. The fecal evacuations have passed by both anus and wound. On the evening of the 10th his urine passed by penis, and the same has occurred twice since.

20th. During the last four days the patient has passed most of his water by the penis; and for the last twenty-four hours all of the feces have passed per anum. Has sat up a portion of each day during the last week.

March 2. Since the last date there has been little or no improvement in the wound. A small portion of urine and feces have continued to pass through it. I this day covered some lint with blue ointment, and passed it up the wound as far as I could on the end of a probe.

17th. The mercurial ointment has been applied several times since the last date, and the wound has externally assumed a healthier and firmer appearance. The sinus is now about the size of a small quill.

April 8. The fistula has diminished so much in size that no opening can be perceived, unless it is very closely examined. A very slight oozing from it continues; and during the last week, while the patient had a diarrhœa, the water that passed from the wound was slightly coloured, as if it were mixed with some feces; so that it is probable the opening in the rectum has not entirely closed. The patient's general health is good, and he runs about and plays very actively.

I had for some time past concluded that the operation for fistula in ano would have to be performed to relieve him from the result of this comparatively slight, yet serious accident, during the operation of lithotomy. But my own health being again on the decline, I left my little patient under the care of the family physician, and soon afterwards sought health for myself in the more northern clime of Michigan.

*Remarks.*—I have endeavoured to give a faithful record of this case, even at the risk of the charge of unskillfulness in the operation. It has appeared to me that if the errors and accidents of practice were more generally recorded, practitioners could profit more by such records than by those of perfectly successful cases. Whether the peculiar contraction of the bladder in this case was unique or otherwise, I cannot say; but I have never seen or heard of any such occurrence. And in the first operation for lithotomy, it appears to me that it would be embarrassing in the hands of any one. The early occurrence of the diarrhœa most probably prevented a union of the small incision in the rectum immediately after the operation; and the frequent recurrence of it subsequently, no doubt greatly retarded the cure. Some surgical authors speak of such accidents as unimportant; perhaps they may generally prove so; but this instance proves that such is not invariably the case. And if the record of this case shall prove of service in any future operation, I shall feel gratified in having recorded it.

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#### DOMESTIC SUMMARY.

*Yellow Fever in Philadelphia in the Summer of 1853.*—Dr. WILSON JEWELL, who, from his position as a member of the Board of Health, had the best opportunities for investigating the history of the outbreak of yellow fever in Philadelphia during the past summer, has given, in a paper read before the College of Physicians at their meetings in August, September, October, and November

last, a very full and interesting account of the origin and progress of this epidemic.

During the month of July last, he remarks, "our unusually healthy city was thrown into a state of great excitement, from a suspicion that yellow fever, with its fearful concomitants, threatened once more, after an absence of the third of a century, to find a 'local habitation and a name' in our midst.

"A careful investigation into the circumstances giving rise to this alarm, has resulted in the development of the following facts, having a direct bearing upon the origin and history of this much dreaded visitation:—

"On the 25th of June last, the barque Mandarin, Capt. R. N. Campbell, sailed from Cienfuegos, Cuba, for this port, all in good health, with a cargo of sugar, molasses, and cigars. Her crew consisted of twelve men. On arriving at the Lazaretto, July 12, after a passage of seventeen days, she was visited by the officers at the station, and, on oath, the captain reported 'cases of small-pox and fever' at Cienfuegos when he left. That he had lost two of his crew on the passage with fever. The statement of the Lazaretto physician is, that the crew, numbering ten souls, were examined and proved to be in good health; notwithstanding this, it was considered prudent that the barque should be detained until thoroughly ventilated, cleansed, and fumigated; the bedding and clothing of the deceased sailors were destroyed, the vessel whitewashed and fumigated in every part with chloride of lime, the bedding of the crew aired, and their clothing washed; she was detained an entire day; and, before being allowed to proceed to the city, all on board were separately and minutely examined; all hands were on duty, and apparently free from disease. The captain spent a portion of the day on shore, and before being permitted up, declared on oath that 'all on board were in good health,' and that no sickness, except that resulting in the death of the two seamen, had occurred during the voyage.

"On the evening of the 13th, the Mandarin reached the city, and came to at South Street wharf. On the 16th she was hauled up to the lower side of the first pier below Lombard Street, where she discharged her cargo. The crew having been previously discharged, the captain and mate remained by her, sleeping on board. On Wednesday morning, July 20, seven days after her arrival, she dropped down to the lower side of the first pier above Almond Street, where she remained until the 26th, when she was removed by order of the Board of Health to the cove below the Navy Yard, from whence, on the 28th, she was remanded to the Lazaretto, in order to undergo a more rigid and thorough purification.

"There was no development of disease of a malignant type in the vicinity of where this vessel lay, as far as has been ascertained (and the strictest inquiry has been instituted by Dr. Gilbert, the Port Physician, to whose politeness we are indebted for many of the facts here recorded), either before or during the time of discharging her cargo, and it is still to be made known that any of her sailors, or any of the labourers employed in removing her cargo, have since been sick.

"There appears to have been no cause for alarm until the cargo was out of the vessel, when it was noticed that a very offensive smell proceeded from her hold. After she dropped down to the pier at Almond Street wharf, on Wednesday morning, the 20th, the stench became intolerable, especially whenever the pumps agitated the bilge-water, contained under the limber planks or flooring of the hold."

On the 19th of July, the day before the Mandarin left her position at Lombard Street wharf, the first suspicious case occurred in the neighbourhood, and from that period the disease extended. Dr. Jewell has carefully investigated the cases, and given a summary of them in the order of their occurrence.

"Before the arrival of the Mandarin, and up to the 19th of July, the day on which the first case of fever occurred, the vicinity of South Street and the wharf, as well as the entire city, enjoyed its usual degree of health. Certain it is, that no epidemic was prevalent. For the week ending July 9, the deaths in the city and liberties were 229, and only one death from fever of a bilious type. For the week ending July 16, there were 206 deaths, including one from

intermittent fever. For the week ending July 23, there were 218 deaths, of which four were from fever. Three of these were in children; one was recorded fever, one bilious, one congestive, and one remittent.

"As yet, no one with whom we have conversed has ventured to intimate a doubt as to the agency of some uncommon and virulent poison, diffused through the atmosphere, as the pestilential cause of the malignant or yellow fever, a few cases of which have made their appearance recently in the vicinity of South Street wharf.

"The essential character and origin of this poison may afford an opportunity for the speculative inquirer to indulge anew, either in an effort to demolish some favourite, though long established, yet not the less false theory of the origin of malaria, or to build upon the ruins of theories, once accredited as ingenious and popular, some more modern system of causation, which, as we advance in medical science, may be destined to meet the fate of those which have preceded it, however elaborately and industriously they may have been exemplified and sustained.

"But, while we leave the discussion of this subject to others, it will not, we conceive, be questioned, when all the facts are clearly and minutely examined into, that this poison, whatever may be the nature of its character, must in part be ascribed to a morbid effluvia generated under the limber planks in the hold of the barque Mandarin, from the putrescent state of her bilge-water.

"Upon the first glance at the Mandarin, and the history of her voyage previous to her arrival at Philadelphia, the advocates for a contagious germ for yellow fever, or, in other words, a principle emanating from the sick, and capable of being conveyed from one person to another, as the focus for the fever which has threatened our city, may imagine they have discovered another instance in support of their favourite theory. This, however, we are persuaded, can hardly be the case, although we are desirous that a careful review of the facts connected with this ill-fated vessel should speak for itself.

"The Mandarin left Cienfuegos on the 25th of June, with a healthy crew. No epidemic was prevailing there when she sailed, although the captain, on oath, admits that a 'few cases of smallpox and fever' did exist. He states that his crew lived on board the barque while in port, anchored off the town, were seldom on shore, and, as far as his knowledge extended, none of them had visited among the sick.

"The captain admits that the hold of his vessel had often been in a foul condition, as all vessels were that carried cargoes of sugar and molasses. Eight days out from Cienfuegos, July 3, one of the seamen sickened with fever, and died on the 7th. On the ninth day at sea, July 4, another took sick with fever, and died on the 9th, being the fifth day of his illness. This last man was thrown overboard after the vessel was within the capes of the Delaware."

"Upon the authority of a highly respectable shipwright, who, in his official capacity, very carefully examined the Mandarin," Dr. Jewell learned "that her pumps are so constructed as to render it impossible to remove all the water in her hold. Being a tight vessel, the bilge-water remaining in her will smell in a very few days after pumping her clean. His language is: 'If you draw those pumps every five minutes in the day, there must remain in her twelve inches of water. My opinion is, that the pumps do not go down low enough; they do not go down within twelve inches of the keel, whereas they ought to be at least eight inches lower.'

"We present this fact in evidence of the impure state of the hold of the Mandarin, six days after she was pumped clean at the Lazaretto.

"In addition, however, to the prevalence of the morbid atmosphere which we have clearly shown developed itself on board the Mandarin—but not until her cargo was discharged—and which so sensibly affected individuals on approaching her when she lay at Almond Street wharf, we must not for a moment conceal the existing causes in the immediate vicinity of South Street wharf, sufficient to justify the supposition of their agency, in the development of disease of a malignant type, when subjected to the high thermometrical influence which prevailed throughout the months of June and July. Not the least mischievous of these causes in the production of an unhealthy atmosphere,

was the outlet of the sewer into the dock at South Street ferry, belching forth continually putrid masses of animal and vegetable filth, accumulating around its mouth, and exposed at low water to the rays of the sun, exhaling streams of unwholesome and poisonous gases into the surrounding air. Besides this agent, there was a most foul wharf at the upper side of South Street; a filthy avenue, between Lombard and South Streets, without any properly-constructed surface drainage; numerous damp and confined cellars subject to an occasional overflow by the ebbing and flowing of the tide-water of the Delaware; and various minor causes that might properly be added to the above category, fruitful in the production of atmospherical changes injurious to health.

"In summing up, however, there is one prominent feature in the chain of our narrative that must not be passed by without notice, viz:—

"No yellow fever existed in our city until six days after the arrival of the Mandarin; that it broke out immediately abreast of the wharf where she first hauled to, and, although there were existing causes in the vicinity—on shore—for the production of disease, there were "plague spots" in other parts of our city, remote from South Street wharf, where, had the question been asked, we should have unhesitatingly located the first appearance of fever of a malignant type, independent of the suspected existence of a foreign focus of infection, competent to exercise its morbid influence on an atmosphere already tainted.

"In presenting the above, it is proper to say that we are influenced solely by a desire to arrive at the true cause for the origin of the yellow fever in our city. That we are no blind adherent to any favourite theory for the spontaneous or domestic origin of yellow fever, nor yet an uncompromising opponent of those who advocate the doctrine of a contagious principle, capable of being carried about from place to place, and under a train of favourable circumstances, productive of disease. An honest inquirer after truth, we would disguise no fact, that might tend in any way to elucidate a question so intricate, that for years it has been controverted by the ablest pens in our profession, and yet remains a mystery."

The whole number of cases of yellow fever registered from July 19 (when the first case occurred) to October 7, the date of the last case, was 170. Of these, 128 were fatal, making a mortality of 75 per cent.

"Of the 170 cases, 147 may be traced directly to the infected locality, or its immediate vicinity. Twenty-two are of doubtful or unknown origin; while in one instance, that of Matthias Pettigrow, the disease was contracted at the Lazaretto station, where he had been at work on board the ship *Caledonia Brander*, from New Orleans."

"One hundred and eighteen of all the cases reported were treated in private practice; twenty-four at the Pennsylvania Hospital, eighteen at the Blockley Hospital, seven at the Bush Hill or City Hospital, and three at *St. Joseph's*, on Green Hill.

"In no instance can it be shown that the disease has spread from those labouring under the fever. At the Pennsylvania Hospital, the yellow fever cases were intermixed in wards with numerous other patients, some ill, and others convalescing from disease, but not an individual, either among the patients, nurses, or visitors, contracted the fever. The like immunity was observed with the cases treated in the Blockley, *St. Joseph's*, and Bush Hill Hospitals. In private practice, although numerous cases were attended away from the infected portion of the city, we have yet to learn that the disease, in a single instance, was propagated from the sick to the well, although there was an unrestrained intercourse between the patients and their immediate friends.

"The only case that bears any resemblance whatever to the disease being communicated from patient to attendant, is that of Daniel Shanahan's wife. These people resided in North Front Street, near Callowhill, full a mile and a half north of South Street, but within a few rods of the Delaware front. No history could be obtained from Daniel as to where he contracted his disease, as he was in a dying condition when first seen. His business, however, was to put coal in cellars, in various parts of the city. He died on the 30th of September with

\* This vessel had yellow fever on board when she arrived.

black vomit, after six days' illness. His wife, Mary Shanachan, who took care of him, sickened on the 28th, four days after her husband, and died in the City Hospital, on the 1st of October, with black vomit. The examination of her body, after death, left no doubt as to the genuine character of her disease. This woman declared that, so far from visiting the vicinity of South Street, she had not even crossed the threshold of her own door for several weeks, having a family of small children around her. The room she occupied, the third story front of an unfinished warehouse, was very filthy, but large, and by no means confined. The whole upper part of the building was rented out, in rooms, to different families of the low order of Irish; everything around presenting poverty, rags, and filth. This case of Mary Shanachan is one of those that the advocates for contagion would readily seize upon to sustain their peculiar views; but a careful review of all the circumstances that enter into its history, will set at rest the least suspicion that the wife contracted the disease from her husband.

"On the 22d of the same month (September), Michael Palmer, residing in Willow Street, two doors west of Front Street, and about one square north of Shanachan's residence, was taken ill with yellow fever. This man unhesitatingly declared that he was not acquainted with the lower part of the city; did not know that he had ever been in the vicinity of South Street wharf; was a shoemaker; worked in Front Street above Noble, and was not in the habit of going anywhere else, but from his shop to his residence in Willow Street. He had no knowledge of Shanachan's family. The question will be asked, where did Palmer contract his fever? Not from contagion, nor from a visit to the infected district, but from a residence in the immediate vicinity of Willow Street wharf, where the culvert along Pegg's Run empties into the Delaware, which outlet, at low tide, is fully exposed, and where at all times there is a large deposit of putrefying vegetable and animal remains. This state of things, with the intense heat of the weather, aided, in all probability, by an epidemic influence stealthily creeping along the wharves from the infected locality, was doubtless the cause, not only of Palmer's sickness, but also Shanachan's, as he must have passed this culvert daily, on his way to the coal-yards at Noble and Green Street wharves, where he was in the habit of obtaining employment. His wife, no doubt, contracted her disease from the same source of infection, as her statement was not confirmed that she had not been out for weeks; and if it had been, she was sufficiently near to have inhaled the poisoned atmosphere without absenting herself from home. Had it been from a contagious principle emanating from her husband's person, the general period allotted for the process of incubation had not expired before she was taken sick, on the fourth day after her husband. And under the circumstances in which the house and the several families occupying it, in all their filth, were situated, we should certainly have looked for other cases of fever, there being free and direct intercourse between all the inmates. Not another case, however, happened within these premises. Hence, we conclude that the origin of Mary Shanachan's fever is as fully established as that of her husband and Palmer's; that contagion played no part in the drama; but that a miasmatic constitution of the atmosphere existed in that vicinity, from the inhalation of which these individuals contracted the fever, resulting in the death of two of them.

"Ninety of all the cases were accompanied with black vomit; equal to 53 per cent. Of these, all died except four, viz. John Reehil, aged 20; Ellen Parr, aged 20; Mrs. Lindsay, aged 28; and James Sweeny, aged 12. The genuineness of the discharge in Ellen Parr's case has been doubted, as stated in a former communication. As black vomit has generally been considered to be a fatal symptom in yellow fever, we should always have some hesitation in relying upon the evidence of recovery after it has occurred, however high the authority from which the statement comes, unless the matter has been carefully submitted to the field of the microscope, and blood-corpuscles found therein.

"The sexes suffered nearly alike from the effects of the fever; the preponderance, however, being on the side of the males. Ninety-three of the cases on record were males, and seventy-seven were females.

"A large proportion of those attacked were foreigners, viz. 102. Of these, 62

were born in Ireland, 19 in Germany, 18 in England, 1 in Scotland, 1 in France, and 1 in Spain. The remainder (68) were natives of the United States.

"The coloured population appear to have been specially exempt from the disease. We have not on record a single case, nor could we learn of any black person having had the fever. This supposed immunity of the coloured race from attacks of yellow fever has been elsewhere observed; but in the fever of 1793, in this city, Dr. Rush says, they took the disease in common with the white people."—*Summary of Transactions of the Philadelphia College of Physicians*, N. S. Vol. II., Nos. 2 and 3.

*Pulsating Tumour of the Occiput.*—Dr. JOHN NEILL, one of the Surgeons of the Pennsylvania Hospital relates (*Med. Examiner*, Feb. 1854) a very interesting and unusual case of this kind.

The subject of it was a man 70 years of age, admitted into the Pennsylvania Hospital April 28, 1853. According to his own statement, he had had, for many years, a small, hard tumour upon the right side of the back part of his head, which never pulsated or gave him any pain till about five months previous to his admission, when, accidentally pressing the tumour against the pillow whilst lying in bed, he heard something crack in it, and that it had constantly enlarged since this occurrence.

At the time of his admission, there existed a large, regularly-rounded tumour upon the right posterior part of the head, commencing about three-quarters of an inch behind the right ear, and extending to the left of the median line posteriorly. It reached also from the margin of the hairy scalp nearly to the top of the head. It was eight inches from side to side, in either direction, over the most prominent part, and sixteen inches in circumference around the base.

The skin over the tumour was stretched and reddened, but not hot nor tender, and could be moved freely upon the parts beneath. There was no pain or uneasiness in the tumour, except a sense of tension.

It had a *pulsation* distinctly perceptible both to the eye and touch, accompanied by a marked *aneurismal bruit*. The pulsation was not a simple rising and falling of the tumour, but an expansion in all directions.

The right occipital artery could be felt beating strongly and with a distinct thrill. Pressure upon it sensibly diminished the pulsation of the tumour, and pressure upon both occipitals almost entirely destroyed pulsation.

There was no swelling of the glands in the vicinity, and no other tumour about the body. The pulse was regular—the radials were not ossified—and the sounds of the heart were natural. By the 30th, the tumour had rapidly increased in size, the skin over it became reddened and tense, and threatened soon to give way, and it was decided to tie both occipitals. Each vessel was secured on the cardiac side of the origin of the *princeps cervicalis*. After the operation, no pulsation could be perceived, nor could the bruit be heard. The tumour became somewhat smaller and much less tense. Its colour also was much less deep.

In the evening, however, the patient had some fever, and the pulsation returned strongly. On the following day, May 1, the pulsation was nearly as strong as ever, but the bruit was scarcely audible. The tumour was hot, and the skin over it red. Cold was applied by lint dipped in ice-water.

May 3. The tumour was smaller, the pulsation decidedly less; no bruit; the skin less red; no fever. The wound looked well, and had partially healed. The cold was continued, and compression maintained by means of a bandage.

5th. Pulsation was still distinct; the bruit just audible. A small abscess had formed in the left wound beneath the skin, which had united. The evacuation of the pus was followed by a chill and subsequent fever.

7th. Erysipelatous inflammation attacked the tumour, and spread over the whole scalp. The inflammation gradually extended over the face and a portion of the neck, and was attended with great swelling and severe general prostration.

Upon the 14th, the right ligature came away.



16th. The erysipelas had disappeared, leaving the integuments of the tumour oedematous and much reddened. The pulsation remained about the same, but still somewhat less than before the operation. The tumour was covered with collodion daily, with reference to its contracting effect and the support it would afford to the skin.

21st. The remaining ligature came away. There is little or no change in the size of the tumour or its pulsation. The patient's general health is as good as before the operation.

The collodion was constantly applied, and a roller so placed around the base of the tumour as to constrict it and press upon the small vessels supplying it. Small branches of the temporal arteries could be felt entering the tumour, and the posterior auriculars were enlarged. Pressure upon the temporals had no appreciable effect upon the pulsation.

He remained in the house until July 17, when he applied for his discharge, thinking himself sufficiently relieved to attend to some little business. When he left the hospital, the tumour was about the same size as on his admission, but the pulsation and bruit were much less. There was no pain or tension in it, and it showed no disposition to extend itself or to ulcerate. The skin over it was loose, and could readily be moved upon the parts beneath.

In September, he died at the almshouse, and, after the *post mortem* had been made, Dr. N. had an opportunity of examining a section of the head containing the tumour. It had encroached upon the cavity of the cranium, through an opening, with rough and jagged edges, of about three inches in diameter.

The dura mater was pushed into the cranium, and was closely connected by its external surface with the tumour. The internal surface of the dura mater seemed perfectly healthy.

Upon cutting into the tumour, it presented the appearance of encephaloid cancer. The larger part of the section was of that white kind which so much resembles medullary matter, and the remainder had a pinkish-gray tint, indicative of greater vascularity. The interior of the tumour was intersected with numerous dense bands, and in the intervals were several small cysts containing fluid.

About one inch and a half from the tumour, there had been disease and absorption of a portion of the parietal bone. The opening in the bone was one inch in diameter, and seemed to be so regularly circular on one side that it appeared to have been made with a trephine. The pericranium and the dura mater did not seem to be diseased, but between the two there was a reddish material, so soft that it was almost semifluid.

A microscopic examination showed the disease to be cancerous.

Dr. Neill, in his remarks on this case, calls attention to the great want of correspondence in the physical characters of the disease and those revealed by the *post-mortem* examination.

"Here was a pulsating tumour, with perfect aneurismal pulsation and bruit; pressure on the occipitals interrupted the pulsation, and the ligature subsequently destroyed the pulsation and bruit completely. The impression that it was an aneurism was irresistible, and I thought that it was a diffused aneurism. Subsequently, however, to the operation, the pulsation returned, and doubts began to arise as to its aneurismal nature; still, there was no reasonable grounds for such suspicions. Under such circumstances, the attention of any one would naturally be directed to the possibility of its being a disease of the brain or dura mater, which had worn an opening in the skull, and that the pulsation was dependent upon that of the brain; but, if such had been the case, the pulsation would not have ceased upon the application of a ligature to the artery. And, moreover, such extensive disease of the brain or its membranes could hardly have existed so long without producing some functional disturbance.

"Then, again, the subject of pulsating tumours in bone, and osteo-aneurism, would be brought to mind, but yet the position and characters of this tumour would not allow it to be included under this class of diseases.

"The probability of its being cancer often occurred to me, but of course there could be no suspicion of its being a hard cancer or an osteo-sarcoma; and when,

by feeling the tumour, the idea of a soft or medullary cancer was suggested, its pulsation, and the fact that that pulsation was once controlled by pressure upon an artery, at once counteracted the conclusion.

"In fact, the case is a rare one. There is no record that I have yet seen of a *pulsating encephaloid tumour of the occiput.*"

*Excision of the Knee-joint for Anchylosis.*—Dr. GURDON BUCK exhibited to the New York Academy of Medicine (Feb. 1, 1854) a patient whose knee-joint he had excised for ankylosis, with deformity. A plaster cast of the limb was shown, which represented its condition before the operation. The leg was flexed at an angle of about  $135^{\circ}$  upon the thigh, and luxated outward so that the tibia was supported on the outer condyle alone, the inner condyle being very prominent inward, with the skin tightly stretched over it. The leg was also rotated outward on its axis, and abducted upon the thigh. A slight degree of motion was still perceptible in the joint.

This condition of things was the result of a gunshot wound, penetrating the joint above the patellæ. The accident had happened about the 20th of April preceding. Severe inflammation and profuse suppuration followed, and openings formed at different points above and below the knee. The limb, having been placed on its outer side, supported by a pillow, had gradually assumed the deformed position represented by the cast. On the 9th day of August, one month after admission into the New York Hospital, the following operation was performed, the patient being under the influence of ether. A transverse incision was made from one condyle to the other, across the lower margin of the patella. A longitudinal incision intersected the middle of this, and extended four inches above and below it. After the flaps had been dissected up, the joint was opened into by an incision across the ligamentum patellæ, at the inferior edge of this bone, and also across the lateral ligaments. The adhesions of the articular surfaces were broken up by forced flexion, very gradually applied. A slice was then removed, with the common amputating saw, from the inferior surface of the condyles of the femur, including the pulley-like surface intervening between. Special care was taken to make this section on a plane parallel with the surfaces of support upon which the condyles rest when the body is erect. The articular surface of the tibia was next removed on a level with the upper extremity of the fibula, after the insertions of the capsular ligament had been dissected up from the posterior half of the circumference of the head of the bone. These broad fresh-cut bony surfaces, which were very vascular and healthy, admitted of accurate coaptation without stretching the tendons and other parts in the ham. To secure them in close contact, and prevent displacement, a flexible iron wire was passed through both bones on either side, and the two ends twisted and left out between the flaps of the skin. The patella, being disorganized and softened, was removed, except the superior margin, which affords insertion to the quadriceps muscle. The flaps of integument were then trimmed and brought together with sutures and adhesive straps, and the limb placed in a fracture-box. The constitutional fever following the operation was moderate, and disappeared within a fortnight. The suppuration never exceeded half an ounce in twenty-four hours. At the expiration of five and a half weeks, the wires, having become loose in their tracks, were removed. No exfoliation of bone was produced by their presence. At the end of nine weeks, the wound had entirely healed, and patient could raise the limb bodily from the bed. A slight degree of motion between the bones is perceptible in the direction of flexion and extension, but none laterally. At the expiration of about three months, patient was allowed to leave his bed and use crutches. He has been steadily improving up to the present time, and now walks with a cane only. There is no longer any mobility between the bones. The difference in length between the two limbs is one inch and a half, which permits the foot to clear the surface of the ground without the body being thrown to the opposite side, as is the case where the length of the ankylosed limb remains the same as that of its fellow.—*New York Medical Times*, March, 1854.

*Radical Cure of Hydrocele.*—Prof. WILLARD PARKER, of New York, recommends (*New York Journal of Medicine*, Jan. 1854), for the radical cure of hydrocele, the local application of the solid nitrate of silver; and he states that this possesses the following advantages over other operations: 1. The ease and safety with which it may be performed. 2. The less liability to severe inflammation. 3. The certainty of success. The following case illustrates the mode of operating, and the results of treatment:—

“Mr. J., aged about 60, an Irishman, waiter by occupation, unmarried, had always enjoyed good health until April last, when he discovered an enlargement of the left scrotum. It had never previously been the seat of any difficulty. The tumour increased so rapidly that, within three weeks, it had become a great annoyance, and prevented him, simply from its size, from continuing at his business. At this time I first saw him, and such had been the rapidity of the growth of the tumour, that it had been mistaken for hernia, and he was wearing a truss. On examination, however, its true character, that of hydrocele, was made out without difficulty; a trocar and canula were accordingly introduced, and a large quantity of water withdrawn, and the patient dismissed. In about three weeks, he again applied for relief, and I proceeded to operate for his radical cure in the following manner: After drawing off the fluid contents of the tumour in the ordinary way, I introduced through the canula a common probe, the end of which was coated, for half an inch or more, with nitrate of silver. This extremity, thus charged with caustic, was carried lightly over the serous surface of the tunica vaginalis, in various directions, and then removed. The patient complained of some pain during this part of the operation. He was directed to keep quiet, for the pain and swelling consequent on the application of the caustic, and apply cooling lotions, should the inflammation be at all severe. He returned home; but, as he suffered but little pain, and the swelling was slight, and as his services could not well be spared, he continued about his business without any interruption. The pain lasted three or four days, when it ceased altogether, leaving the scrotum of its natural size. In this condition, it has since remained, with no symptoms of a return of the hydrocele, the cure having been complete.”

*Common Salt as a Remedy for Intermittent Fever.*—In the No. of this Journal for July, 1852, Dr. W. P. Lattimore called attention to the employment of common salt as a cure for intermittent fever, a practice then recently introduced by MM. Montdezert and Piorry.

Dr. J. C. HUTCHINSON was induced by these representations to experiment with the article, and in the *New York Journal of Medicine* (March, 1854) he relates twenty-two cases of intermittent fever treated by it.

The dose in which it was given varied from eight to twelve drachms during the apyrexia. At first, eight drachms were given, but the amount was subsequently increased to nine, ten, and even twelve drachms in one instance, with obvious benefit. Children required somewhat larger proportional doses than adults.

Mucilage of elm was selected as the vehicle, on account of its convenience, and because it sufficiently disguised the remedy, which was deemed a matter of importance; for it would have lost much of its efficacy, or have been repudiated altogether, had the patients known they were taking simply common salt; as it is well known to physicians that the influence of the mind upon this disease is very considerable. The following was the formula used: *R.* Chloridi sodii ℥iij; ulmi pulv. ℥iij; aq. bullientis f℥viij. Infuse two hours and strain. This forms a saturated solution. Dose, a tablespoonful every two, three, or four hours, so that five or six doses may be taken during the apyrexia. It was not deemed necessary to precede its employment by evacuants, because the patients had recently used such remedies during their former attacks; and, moreover, Dr. H. preferred to use the salt alone, because its real value could thus be better determined. When it is necessary to precede the use of the salt as an antiperiodic, by emetics or cathartics, perhaps there is nothing better for the purpose, in ordinary cases, than the same remedy administered in emetic doses, which will usually produce also moderate catharsis.

In most of the cases the remedy was well tolerated by the stomach, nausea or vomiting having occurred in but four. Four cases also had moderate alvine evacuations, unattended with pain. There was considerable thirst in every case; no other unpleasant effects. When given in the above manner (dissolving it in as small a quantity of water as is possible), it is less likely to disturb the stomach than the same or even a less amount would in a larger proportion of the solvent. The taste was objected to by some, whilst others disliked it much less than quinia.

The following were Dr. Hutchinson's conclusions:—

"I. Although inferior to cinchonia and its preparations, it yet forms a *very good substitute* for them in intermittent fever, having failed, as we have elsewhere seen, to produce a speedy suspension of the paroxysms in 31.8 per cent. of the cases only; in a majority of cases, therefore, it may be substituted for quinia.

"II. It may be used instead of, and, indeed, *preferably* to quinia: First. In cases not unfrequently met with, where the latter remedy is forbidden by the very unpleasant nervous and cerebral symptoms it produces (delirium, tinnitus aurium, cephalalgia, faintness, &c.), an example of which I have recently seen in the New York Hospital, when sulph. copper was substituted. Secondly. Where quinia, from frequent repetition, has lost its effect in ague. Thirdly. It is commended on the *score of economy*, which is a consideration of importance to the poor especially, who are now in a measure debarred from the use of quinia by its high price. And, fourthly. It is always at hand, whilst quinia sometimes cannot be obtained.

"III. It has been found to be *more energetic* in curing ague than any of the vegetable or mineral tonics commonly used for that purpose, excepting bark; and should, therefore, be preferred to arsenic, which has been ranked by M. Andral, Prof. Wood, and indeed most other authorities, next in value to quinia. And, moreover, I think arsenic should never be used until after quinia and common salt have failed to do good, on account of its unpleasant and sometimes disastrous consequences to the general system and stomach, and the increased facilities it affords for using the remedy as a toxicological agent."

*Death from Chloroform.*—Dr. DE WOLF, of Chester, Mass., records (*Buffalo Medical Journal*, Dec. 1853) the following case:—

"I was called into an adjoining town in consultation with my friends, Drs. Freeland and Smith. The patient was a young lady of about twenty-five years, of full and vigorous health, and in her second accouchement. I found her dying, but conscious, and obtained from her physicians the following history:—

"Some thirty hours before, Dr. Freeland was called in, and found her in the 'preparatory' stages of active labour.

"For several hours, there was very little development of the case, and the patient became importunate for chloroform, having inhaled it during her first parturition. The doctor explained her present condition, and advised her that *now* was an improper time for the use of it, and, after waiting a few hours, bled her from fifteen to twenty ounces. At this period, the case seemed to have made but little progress, and, after an anodyne of some forty drops of tr. opii, she obtained some rest.

"When she awoke, she complained of pain in the abdomen and loins, and again importuned for chloroform. Strong and full pulse, not exceeding 100; tongue moist and clean; uterine action rather tardy; os uteri yielding; head advanced; pelvis roomy, and no unpleasant symptom. Under these circumstances, the doctor promised her speedy relief, and persuaded her to take a decoction of the ergot. Very soon she insisted on having the chloroform, and sent a messenger for Dr. Smith. The doctor came, and brought, as requested, a small bottle of chloroform, containing, as he believes, not more than  $\frac{5}{ij}$ . He put it upon a table in sight of the patient, and, while listening to Dr. Freeland's narrative of facts in the case, the patient instructed a female friend to give her the bottle, and refused to give it back.

"She inhaled from time to time, and when told by both physicians that, by persisting in the use of it, she would peril the successful termination of her

labour, and possibly her life, her reply was: 'My pains are quite comfortable.' And in this condition remained about twelve hours.

"Upon a careful examination, no material change in arterial action or nervous power was discovered, but very clearly, as they thought, a promising change in the rigidity of organs, and, the chloroform being gone, they felt confident there would soon be increased uterine action, and a triumphant finishing up of the case. Alas! they were soon to be released, and their patient too. Now it was that absence of all pain, a cold sweat, cold extremities, oppressed and whizzing respiration, receding pulse, and 'vacant glare,' pointed to a sudden and fatal termination. All their friction, hot appliances, and active stimulants, were of no avail. I looked upon the dying woman with feelings of deep sorrow, for in her history I could see nothing, aside from the chloroform, to bring before me such an end, and, hence, I came to the following conclusions:—

"1st. The *time* of her suffering would not have done it.

"2d. The *amount* of her suffering would not have done it.

"3d. There had been no rash quackish meddling.

"4th. There was no rupture of vagina or uterus.

"5th. There was no evidence of cerebral congestion from plethora or other cause.

"6th. Patient perfectly conscious, but insensible to pain; and

"Finally. Her death, as it seemed to me, could be chargeable to nothing but the abolition of vital force, from frequent repetition of partial anæsthesia.

"I have said she was perfectly conscious, and here is the evidence: She knew they had sent for me, and, on my arrival, I met the physicians in an adjoining room, and, while listening to the facts above written, there came in a lady and said the patient desired to see me. In surprise, I asked, *how is this?* The answer was, *she is positively dying, but conscious.* As I came into her presence, she anxiously inquired, 'O, doctor! can you take my child and save me?' I very soon assured her I could take the child, and did so. To take the child, was *then* quite easy—but to *save her*, was impossible. The child, a fine boy, was dead, and in ten minutes the anxious mother was a corpse."

*Onanism in a Boy Seven Years old.*—The following remarkable case is recorded (*N. W. Med. and Surg. Journ.* Feb. 1854) by Dr. A. GARWOOD:—

The patient was a boy I took out of the county poor-house to live with me, and had him bound by the superintendents of the county poor till he was 21 years of age.

He was seven years old, very fair complexion, light hair, black eyes, a slender delicate frame, and apparently an innocent, sprightly, and interesting child.

I did not suspect him of being a masturbate till I caught him in the act of self-pollution. I then learned from him that he was taught the loathsome practice at school, when but four years of age, and that the habit had become confirmed, and had been growing upon him ever since. I punished him at the time, and gave him a lecture on the consequences of the habit if continued; told him that it would injure his health and mind, that it would make him a weakly, foolish, good-for-nothing boy, that other children would not be allowed to play with him, and that I would take him back to the poor-house. He seemed very penitent, and promised reformation.

Never having had much experience in such cases, I thought the means I had used might possibly cause him to discontinue the filthy practice. But I soon learned that he did not quit it for a single day or night. He commenced living with me in the summer, and the habit grew upon him during the fall and winter rapidly, as was evident from the stains on his linen, from his general appearance, and from his own confession. When he found that he could not conceal the fact from me any longer, he became very bold about it, and seemed to lose all shame and delicacy of feeling on the subject. He stated that he never missed a night but that he indulged in it two or three times, that he engaged in it at the privy, that when he went to school, instead of playing with the other boys, he would sneak off by himself to practice it, and whenever he could get off by himself at any time or place, he was at it. He now de-

clared that he could not, and would not quit it, because "he was so used to it." I could not extort a promise from him to quit it, and he concluded that he would rather go back to the poor-house than to leave off the practice. The symptoms at this time were emaciation, inactivity, did not want to play, but would sit for hours listless and heedless of what was going on; his mind seemed more dull about everything except the gratification of his passion, for which, in seeking opportunities, he showed great acuteness and deception. He was very stiff in his limbs and back, so that it required quite an effort for him to exercise. There was a dark areola beneath the eyes. He could not look a person in the face. Had an excellent appetite, ate heartily, and craved the heartiest kind of food—not having missed a meal during the seven months he lived with me. When kept from it through the day by close watching, he became almost frantic; he would thrust his finger in his nostril, often making it bleed, would rub between the fingers of one hand with the forefingers of the other, and seemed to be perfectly on nettles, as though he could hardly endure it.

But the most prominent and disgusting symptom of all was incontinence of urine. He lost the control of the sphincter of the bladder to such an extent, that immediately after indulging he had to urinate several times, and often kept his clothes saturated half the time, in consequence of being unable to retain his urine till he could get to a proper place to evacuate. He has a great many times wet his pants at the table, and often had to leave it in the middle of a meal to run to the privy, and very often failed to get there in time.

*Treatment.*—After using every moral means in my power, I tried cold bathing, restricting his diet to plain unstimulating food, whipping him as hard as I dared to without injuring the child, blistered his penis till it was all over raw, and, as a *dernier resort*, tied his hands. All these efforts were entirely abortive; whilst his penis was raw he indulged as much as ever, and did not seem to regard the soreness. And when his hands were tied, he would bring on a seminal discharge by friction against his clothes, between his thighs, or between his abdomen and bedclothes, and at last he obtained such command over the abdominal, perineal, and gluteal muscles, in connection with the force of imagination, that he could produce a discharge sitting on a chair in my presence, when there was no motion perceptible. The desire of self-gratification appeared to be constantly in his mind, and I am convinced that he would forego any and everything else, even death itself, before he would quit the practice.

*Excision of the entire Ulna.*—Prof. CARNOCHAN records (*American Medical Monthly*, March, 1854) a case of inflammation of the ulna, with its consequences—carious ulceration, necrosis and eburnation—in which he excised this bone, and with the preservation of the functions of the arm and hand.

*Lobelia Inflata in Traumatic Tetanus.*—F. KNOWLES, M. D., Prof. of Practice of Medicine in Iowa Medical College, has employed tincture of lobelia with advantage in three cases of traumatic tetanus. The tincture was given in drachm doses about every ten minutes, until a mitigation of the symptoms became apparent, and then a decoction of capsicum was administered to excite the stomach to emesis. In all these cases the violence of the symptoms subsided after free emesis. The remedy was then continued in small doses, and in a few hours all spasms ceased.—*Iowa Medical Journal*, Feb. 1854.

*Felt Splints.*—These splints were formerly manufactured somewhere in New England, and were on sale at many of the surgeon's instrument makers. We were in the habit of using them, and with satisfaction, but latterly have not been able to procure them. Prof. FRANK H. HAMILTON remarks, we think justly, that they are, in some respects, superior to gutta serena, and he gives (*Buffalo Medical Journal*, Dec. 1853) the following recipe for making them:—  
"Dissolve three pounds of gum shellac in two quarts of alcohol. It should be dissolved in a tin vessel, furnished with a tight cover to prevent evaporation. Spread a piece of old or new woollen cloth on a board, and, with a clean brush,

saturate both sides of the cloth with the solution. Hang it up until it is thoroughly dried. Lay it again upon the board, and apply a second coat of the solution to one side only of the cloth. Dry again, and apply a third coat to the same side. There will now be three successive layers upon one side, and one on the opposite. While the last coat is yet fresh, fold the cloth so that the side having three coats shall be applied to itself. Now, with a hot flat-iron, smooth and press the surfaces together. When it is cold, a slight rubbing with sand-paper makes it fit for use.

"It becomes a firm, almost unyielding board, but exposure to a moderate heat will make it pliant, so that it can easily and accurately be adapted to any surface."

*Aphonia cured by Electro-Magnetism.*—Dr. F. K. BAILEY relates (*Peninsular Journal of Medicine*, Dec. 1853) a case of aphonia in a female seventy-nine years of age, of four years' standing, completely cured by electro-magnetism.

OBITUARY RECORD.—Died in New York, on the 7th of December last, aged 62 years, after a painful illness of many months, THOMAS G. MOWER, one of the Senior Surgeons of the United States Army.

At the suggestion of an esteemed correspondent, we copy from the *New York Daily Times*, of the 11th ultimo, the following just tribute to his memory. Dr. Mower was for many years the chief medical purveyor of the army, and the presiding officer of its Boards of Medical Examiners. His loss to the service, if not irreparable, will be for a long time greatly felt. As an officer and a gentleman he won for himself the respect and esteem of the whole army, and the affectionate regard of every member of the medical staff:—

"The subject of this notice was born at Worcester, Massachusetts, February 19, 1790, graduated at Harvard University in 1810, and, having made choice of the medical profession, entered the office of the late Dr. Thomas Babbitt, of Brookfield, Massachusetts, as a student; and, having finished his course of studies, passed an examination, and was licensed to practice his profession. The degree of M. D. was subsequently conferred upon him by the College of Physicians and Surgeons of New York. About the time he received a license to practice, war was declared by the United States against Great Britain, and the young medical student, being of an ardent temperament, and strongly imbued with feelings of patriotism and the love of country, applied for a commission in the medical department of the army. On the 2d of December, 1812, the gloomiest period of that war, he received the appointment of surgeon's mate of the Ninth Regiment of Infantry, of which the late Dr. Joseph Lovell, afterwards surgeon-general of the army, was the surgeon, and immediately after repaired to its head-quarters, then at Burlington, Vermont, and remained with it, serving with distinguished zeal and ability until the close of the war in 1815; having been promoted to the rank of surgeon in 1814. He was present with his regiment, which formed a part of that gallant band of heroes known as 'Scott's Brigade,' whose chivalric deeds and gallant daring will be remembered with pride and gratitude by every true American heart so long as a single shred of the stripes and stars is left to float upon the breeze, and participated in the capture of Fort George, and the battle of Christler's Fields, in 1813, and in the more brilliant and sanguinary affairs of Lundy's Lane and Chippewa, in 1814; being always at his post, and, though belonging to that class of officers known as non-combatants, never shrinking from the place of danger, which was always considered by him the post of honour. At the close of the war, in 1815, he was one of the few surgeons retained in service on the peace establishment; and, in 1818, was found serving with the Sixth Regiment of Infantry, at Plattsburg, New York, then under the command of the late General Henry Atkinson. This regiment was ordered from Plattsburg, in 1818, to establish a new post at Council Bluffs, then an extreme outpost on the western frontier; and it was then that he probably experienced the severest trials to which he was subject during the whole of his military career, as the command, the first winter after its arrival there, became seriously affected by the scurvy, which carried off many men, and left many more in an enfeebled state

of health, from which they never recovered. To see men daily perishing, and others hopelessly ruined in their constitutions, for the want of a few of the simplest remedies, and those remedies not to be had, places the medical officer in charge of a military hospital in the most trying situation known to the profession in the army. Of the officers composing this command—about thirty in number—it is believed there are but three now living. Having served at several military posts on the extreme western frontier, from 1818 until 1822, he was ordered to New York, where he remained on duty as medical purveyor of the army until the time of his death, making occasional tours of inspection, and performing other important detached duties during this period. In the discharge of the responsible and important duties of medical purveyor, no man could have been more skilful, faithful, or efficient; and it will be found no easy matter to supply his place. He spared no pains in procuring the best medical and hospital supplies of every kind, avoiding all favouritism, and never allowing himself to be overreached or imposed upon by those who make it their study to defraud the government. But it was as presiding officer of boards of medical officers of the army, convened from time to time, for the examination of candidates for admission into the army, and those already in the army eligible to promotion, a duty upon which he was always placed, when it was practicable, that he most excelled, and that his services were most useful and beneficial to his department and service. The young and meritorious candidate for examination always found in him a friend who was ready with words of encouragement and the kindest manner to help him through the trying ordeal, while the forward and ignorant pretender found no favour with him, and was never able to impose upon his sound and discriminating judgment. It may truly be said that by his example, admonition, and advice, always cheerfully and in the kindest manner imparted to the young and inexperienced members of his department, it owes no small part of its present high standing and efficiency, and it will be many years, it is hoped, before that influence ceases to exist.

“In all the relations of life he was most exemplary and unexceptionable; as a husband, devoted and affectionate; as a parent, kind, indulgent, and most solicitous for the honour and welfare of his children; as a friend, ardent, disinterested, and unchangeable; as a man, upright, punctilious, exact in all his dealings, charitable, and actively benevolent; as a gentleman, affable, polite, courteous, and deferring to his equals, and even considerate of the feelings and interests of those below him in position; as a soldier, jealous of the honour of his profession, firm, decided, and brave, knowing no fear but the fear of a mean action, quick to perceive, and prompt to execute; as a physician and surgeon, mature in judgment, sound in theory, skilful in practice, humane, sympathetic, and self-sacrificing in his efforts to relieve or alleviate the sufferings of his patients; as a Christian, sincere without ostentation, believing in religion as a principle rather than to be possessed than spoken of, and practising, rather than professing the Golden Rule. That he has gone to the enjoyment of that reward promised to the just made perfect, no one can doubt who knew his manly, generous nature and many virtues.”

## MEDICAL SOCIETY OF THE STATE OF PENNSYLVANIA.

THE Annual Meeting of the Society for 1854, will be held in the Borough of POTTSVILLE, Schuylkill County, commencing on WEDNESDAY, MAY 31, at 11 o'clock A. M. Secretaries of County Societies are requested to send certified copies of the credentials of their delegates to either of the undersigned before that date.

HENRY S. PATTERSON, M.D.,

No. 92 Arch Street, Philadelphia.

ISAAC R. WALKER, M.D.,

Spread Eagle Post Office, Chester County, Pa.



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Eberle, Jacob K.	Pennsylvania.	Chronic Hepatitis.
Eldridge, Erwin J.	Maryland.	Embryulcia.
Eskridge, John M.	Georgia.	Structure and Functions of the Liver.
Evans, Robert M.	Mississippi.	Femoral Hernia.
Ewell, Joseph F.	Kentucky.	{ Physical Signs of the Diseases of the Heart and its Membranes.
Ewing, James P.	Tennessee.	Phrenitis.
Ewing, William D.	Virginia.	Dyspepsia.
Fennell, James W., Jr.	Alabama.	{ Fatal Termination of an old Burn by Can- cerous Degeneration.
Fithian, Joseph, Jr.	Ohio.	Melituria.
Fontaine, Abraham W.	Virginia.	Nervous Influence on Organic Action.
Foster, David W.	Mississippi.	Influence of Climate.
Foster, George B.	Massachusetts.	{ Ulcers, their Varieties, Causes, and Treat- ment.
Fruit, Richard B.	Pennsylvania.	Pulsus Arteriosus.
Fulkerson, Putnam S.	Missouri.	Typhoid Fever.
Gay, W. Douglas	Kentucky.	{ Adaptation of the Physical System of Man to the External World.
Gilbert, Silas Terrell	New York.	{ Effects of Mercury when taken into the System, and the Propriety of using it as a Remedial Agent.
Gleeson, John K.	Louisiana.	Puerperal Fever.
Goodell, William	Turkey.	Physiological Correlation.
Goodrich, Robert A.	Virginia.	Typhoid Fever.
Gregory, Oscar	Virginia.	Acute Gastritis.
Griesemer, Calvin H.	Pennsylvania.	Auscultation and Percussion.
Grimes, Franklin T.	Kentucky.	Acute Pleurisy.
Haldeman, George W.	Pennsylvania.	Woman and her Peculiarities.
Hall, A. Douglas	Pennsylvania.	Metro-peritonitis.
Hall, John L.	South Carolina.	Congestive Fever.
Hall, William Hansell	Georgia.	Water.
Halsey, Luther F.	Pennsylvania.	Depletio Sanguinis.
Haring, John J.	New York.	{ Anatomy, Functions, Diseases, and Pa- thological Indications of the Tongue.
Harris, Sampson H.	Mississippi.	Wounds.
Harris, Thomas S.	Virginia.	Mercury, its Oxides and Chlorides.
Harrison, Marcellus T.	Missouri.	Functions of the Spleen.
Hart, Byron	Pennsylvania.	Empiricism.
Hart, William P.	Tennessee.	Propter Uterum Mulier est id quod est.
Harter, M. Lair (M. D.)	Pennsylvania.	Lobelia Inflata.
Haskell, Charles Henry	Massachusetts.	Typhoid Fever.
Head, Joseph (M. D.)	Illinois.	Emetics.
Henderson, Jophanus	Maine.	Laryngitis.
Hendrix, H. Walter	South Carolina.	Intermittent Fever.
Hezlep, William B.	Pennsylvania.	Pneumonia.
Hicks, Edwin S.	Virginia.	Croup.
Hill, Lafayette	Tennessee.	Fatal Circulation.
Hilleary, John W. (M. D.)	Maryland.	Tracheotomy.
Hillyer, Eben	Georgia.	Hernia Inguinalis.
Hitch, John W.	South Carolina.	Dysentery.
Hoffman, William F.	Pennsylvania.	Uterine Hemorrhage.
Hollifield, Horatio N.	Pennsylvania.	{ Chemical History and Therapeutical Ap- plications of Mercury.
Holman, William P.	Mississippi.	Puerperal Peritonitis.
Holmes, Henry J.	Mississippi.	Cynanche Trachealis.
Homan, John C.	Virginia.	Gastric Digestion.
Hoover, Andrew S.	North Carolina.	Typhoid Fever.
Hopkins, Thomas B.	Texas.	Yellow Fever.
Houston, Armstrong P.	South Carolina.	Absorption.
Howard, William A.	Georgia.	Pathological Anatomy.
Hoyt, William D.	Georgia.	Atelectasis Pulmonum.
Humphrey, William F.	Connecticut.	Preparatory Education of a Physician.
Hunter, Duke W.	Missouri.	Application of Chemistry to Medicine.
Hurt, Munford B.	Virginia.	Pneumonia.
Huston, Robert M. (M. D.)	Virginia.	Jaundice.
Inglesby, William G.	South Carolina.	{ Differential Diagnosis between Typhus and Typhoid Fever.
Ingram, James M.	Tennessee.	Signs of Pregnancy.
Ives, Charles L.	Connecticut.	Auscultation and Percussion.
Jacobson, Edward H.	Pennsylvania.	{ Influence of Exercise on the Health of the Skin.
Johnson, James W.	South Carolina.	Typhoid Fever.
Johnston, Thomas	Pennsylvania.	Pyrosis.
Johnston, William F.	Kentucky.	Gonorrhœa.
Jones, William W.	Kentucky.	Chemical Research.
Kennedy, Stewart	Pennsylvania.	{ Epidemic Cholera, as it prevailed in Chambersburg, Pennsylvania, in 1852.
Kent, John D.	Virginia.	Inflammation.

## GRADUATES OF JEFFERSON MEDICAL COLLEGE OF PHILADELPHIA,

MARCH, 1854.

At a Public Commencement, held on the 11th of March, 1854, the degree of DOCTOR OF MEDICINE was conferred on the following gentlemen by the HON. EDWARD KING, LL. D., President of the Institution; after which a Charge to the Graduates was delivered by PROFESSOR ROBLEY DUNGLISON.

NAME.	STATE.	SUBJECT OF THESIS.
Abbott, Luther J.	Ohio.	Opium.
Allison, Thomas H.	Pennsylvania.	Dysentery.
Archer, Edward C.	Virginia.	Scarlatina.
Armstrong, Richard	Pennsylvania.	Clinical Practice.
Austin, William	South Carolina.	Dysentery.
Baptist, William H.	Alabama.	Typhoid Fever.
Barnes, Henry F.	Indiana.	Strangulated Inguinal Hernia.
Barret, R. Layton	Virginia.	Typhoid Fever.
Barr, Robert	Pennsylvania.	Phenomena of Inflammation.
Bartleson, Samuel P.	Pennsylvania.	Diabetes.
Bates, Thomas B.	South Carolina.	Conduct of a Physician.
Bates, Thomas J.	Virginia.	Remittent Fever.
Bell, James M.	Mississippi.	{ Inquiry into the Nature and Treatment of Poisoning by Reptiles.
Bellangee, J. Barton	New Jersey.	Entero-mesenteric Fever.
Berryhill, Samuel G.	Pennsylvania.	Entero-mesenteric Fever.
Bethune, Roderick A.	Alabama.	Mania à Potu.
Birdsong, Miles J.	Texas.	Menstruation.
Bishop, J. Leander	Nova Scotia.	{ Obligations of Medicine to Chemical Science.
Blake, Joseph C.	North Carolina.	Anatomy of the Human Liver.
Bloodgood, Delavan	New York.	Emansio Mensium.
Blount, Benjamin F.	Alabama.	Pneumonia.
Booton, John G.	Virginia.	Crural Phlebitis.
Bosbyshell, Charles B.	Illinois.	Typhoid Fever.
Bosset, William C.	Pennsylvania.	Acute Dysentery.
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